S/M No: TCP822FEF0

Service Manual

Colour Television 76 Cm WIDE STEREO

CHASSIS : CP-822F

MODEL : DTA-3220ZZ *
DTA-3220ZL *
DTA-32W9ZZ
DTA-32W9ZL

■ Specifications

CRT	76ERF042X
SYSTEM	PAL/SECAM-B/G,D/K,PAL-I/I',SECAM-L/L' NTSC-3.58/4.43 (Play back)
Main Voltage	230V AC, 50Hz
Power Consumption	Stand-by mode : 3.0Watts Normal operating mode : 150 Watts
Sound Output	10 + 10 Watts, 10% THD at RF 60% mod. (1kHz)
Speaker	15W 8ohm x 2 EA Maximum
Antenna Impdeance	75 ohm unbalanced input (Din Standard)
Tuning System	Frequency Synthesize(FS) Tuning System
Tuner	UV1316/A(Philips), DT5-BF18D(Partsnics), TECC2949PG35W(S/S), EL2782-105-B(Siel)
Number of Program	100 programs
Aux. Terminal	TV output) RCA type AV input jack Headphone jack
Remote Controller	R-22D06 with 2 "AAA" type batteries
Teletext	TOP(5 Page memory) & FLOF(7 Page memory) - West option : English, German/Dutch/Flemish, French, Italian, Spanish/Portuguese, Swedish/Finnish/Danish, Hungarian, Rumanian, Turkish
OSD Language	- West:English, German, French, Italian, Spanish, Nethelands, Swedish,

Caution

: In this Manual, some parts can be changed for improving. their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Parts Price List)in Service Information Center(http://svc.dwe.co.kr)

DAEWOO ELECTRONICS Corp.

http : //svc.dwe.co.kr

Nov. 2003

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SAFETY INSTRUCTION

WARNING : Only competent service personnel may carry out work involving the testing or repair of this equipment

■ X-RAY RADIATION PRECAUTION

1. Excessive high voltage can prodece potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 29-31kv at max beam current. The high voltage must not, under any circumstances, exceed 35kv. (33kv : SAMSUNG CRT)
   Each time a receiver require servicing, the high voltage should be checked. It is improrrtant to use an accurate and reliable high voltage meter.
2. The only source of X-RAY Radiation in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

■ SAFETY PRECAUTION

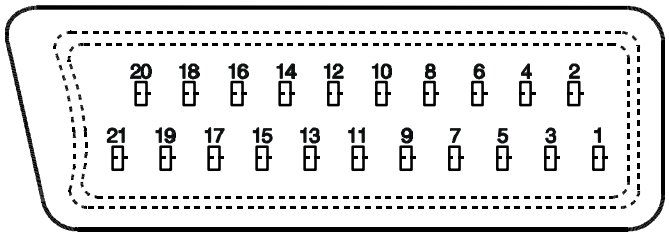
1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back board removed involves a shock hazard from the receiver.
   1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.
   2) Dischange the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.
3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10mm away from circuit board.
4. Keep wires away from high voltage or high temperature components.
5. This receiver must operate under AC230 volts, 50Hz. NEVER connect to DC supply or any other power or frequency.

■ PRODUCT SAFETY NOTICE

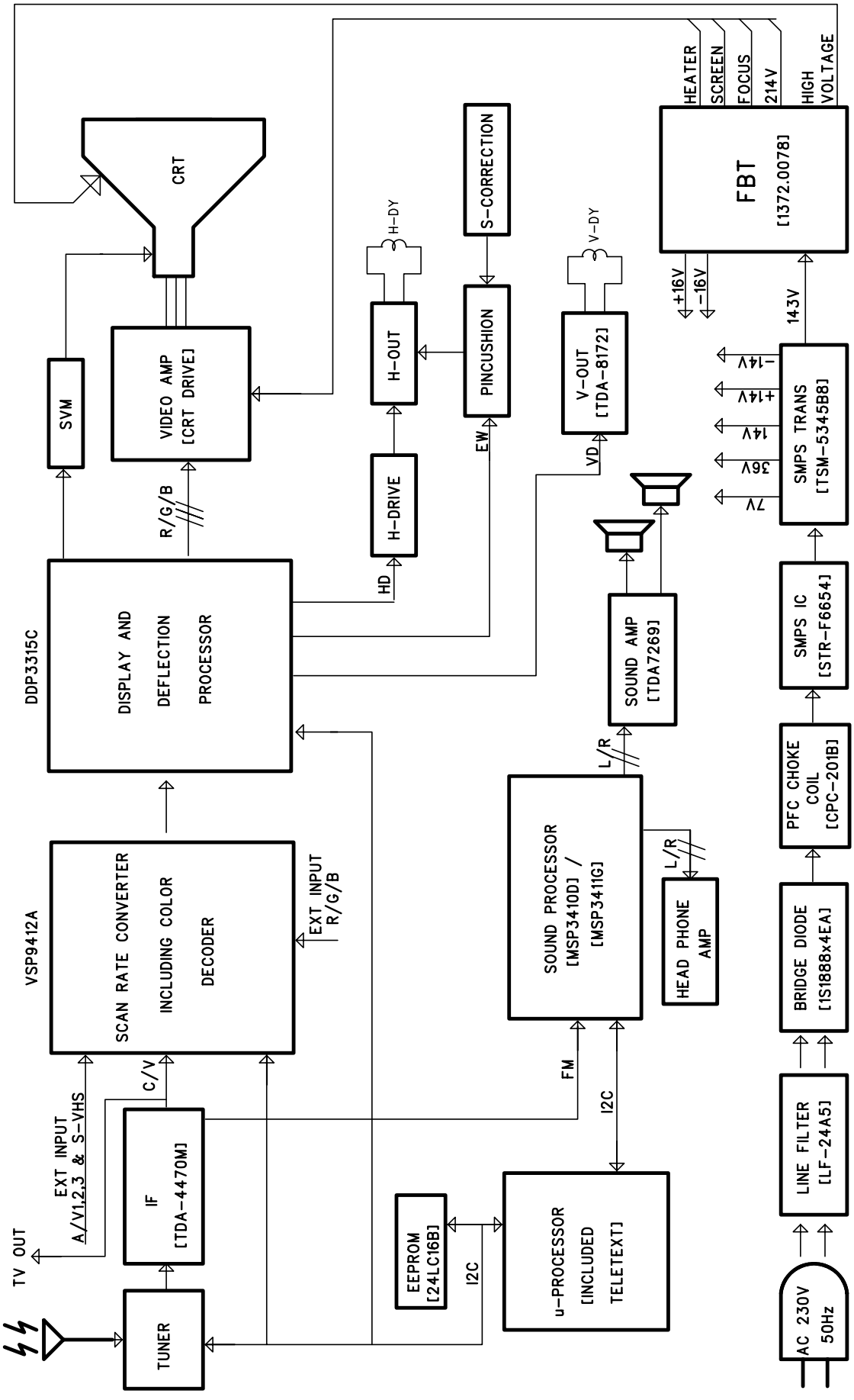
Many electrical and mechanical parts in this have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are identified designated symbol on the parts list.
Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characterisitics as specifide in the parts list may create X-RAY Radiation.

SPECIFICATIONS

PIN	Signal Designation	Matching Value
1	Audio Out (linked with 3)	0.5Vrms, Imp < 1 kΩ (RF 60% MOD)
2	Audio In (linked with 6)	0.5Vrms, Imp < 10 kΩ
3	Audio Out (linked with 1)	0.5Vrms, Imp < 1 kΩ(RF 60% MOD)
4	Audio Earth	
5	Blue Earth	
6	Audio in (linked with 2)	0.5Vrms, Imp < 10 kΩ (RF 60% MOD)
7	Blue in	0.7Vpp ± 2dB, Imp 75Ω
8	Slow (Function) Switching	TV : 0-2V, PERI : 9.5 - 12V, Imp > 10 kΩ
9	Green Earth	
10	NC	
11	Green In	0.7Vpp ± 2dB, Imp 75Ω
12	NC	
13	Red Earth	
14	Rapid(Blanking) Switching Earth	
15	Red In, C In	0.7Vpp ± 2dB, Imp 75Ω
16	Rapid(Blanking) switching	Logic 0 : 0 - 0.4V, Logic 1 : 1 - 3V, Imp 75Ω
17	Video Earth	
18	Rapid Blanking Earth	
19	Video Out	1Vpp ± 2dB, Imp 75Ω
20	Video In, Y In	1Vpp ± 2dB, Imp 75Ω
21	Common Earth	



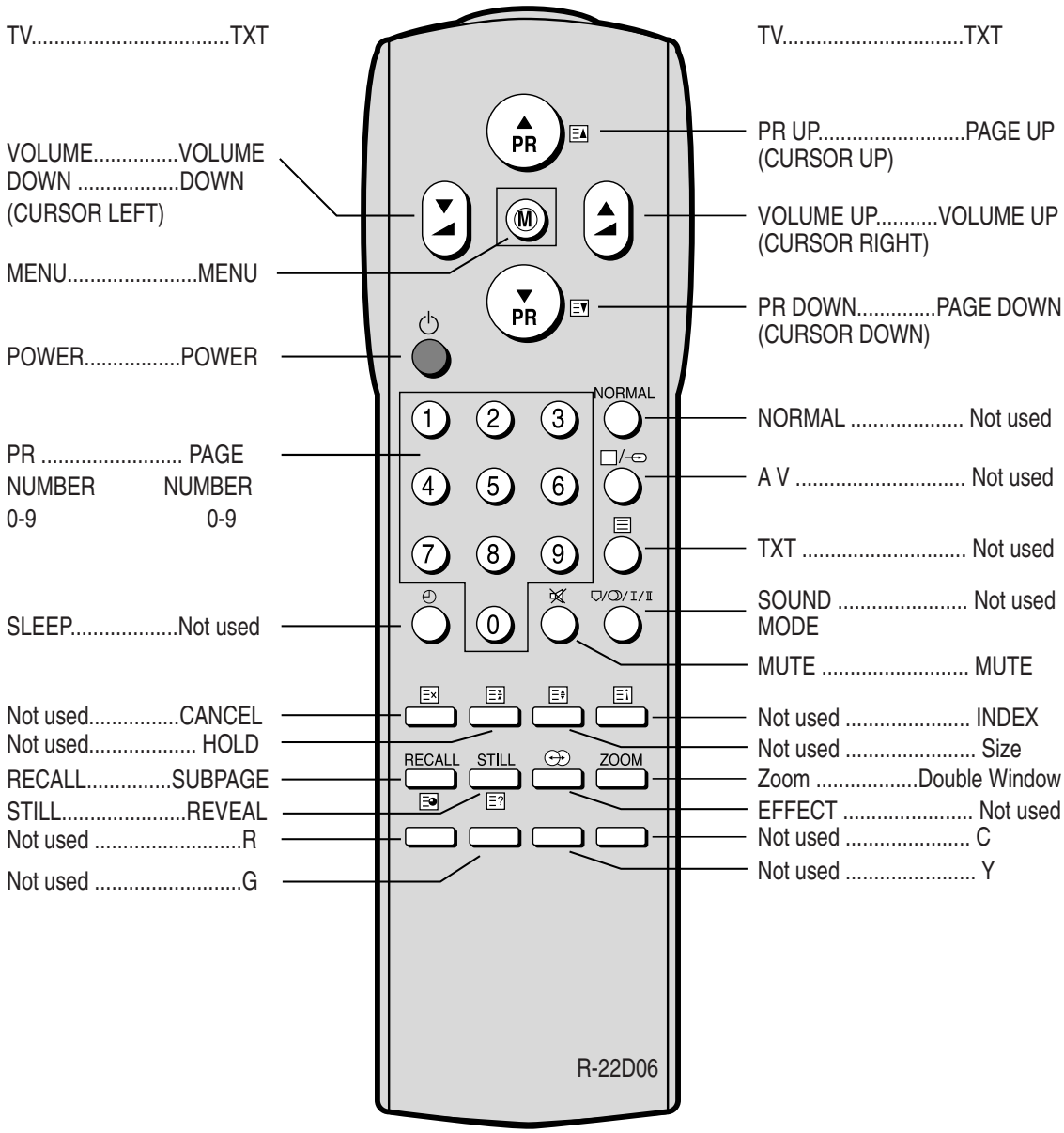
CIRCUIT BLOCK DIAGRAM



ALIGNMENT INSTRUCTIONS

■User Remocon

1. R-22D06



IC MASTER MEMORY CONDITION TABLE FOR CP-822F CHASSIS

CONTROL	MODEL	BASIC	W/VIRTUAL DOLBY
Deflection	V. Slope	-015 (const.)	-015 (const.)
	V. Center	955	955
	V.Size	68	68
	S.Curve	027 (const.)	027 (const.)
	H.Center	-333	-333
	H.Width	40	40
	EW.Para	-040	-040
	EW.Cor Top	012	012
	EW.Cor Low	008	008
	EW. Sym	-006	-006
W/B	R Bias	330 (const.)	330 (const.)
	G Bias	330	330
	B Bias	370	370
	R Drive	400 (const.)	400 (const.)
	G Drive	370	370
	B Drive	370	370
	G2 Adjust	000	000
	Sub Bright	006	006
Opt1.	Double TEXT	-514 (can't see)	-514 (can't see)
	Wide Option	YES	YES
	* Tuner Is	DWE (opt.)	DWE (opt.)
	Flat Option	YES	YES
SVM	Svm SVG	003 (const.)	003 (const.)
	Svm SVD	004 (const.)	004 (const.)
	Svm SVDEL	012 (const.)	012 (const.)
	Svm SVCOR	009 (const.)	009 (const.)
BCL	Bcl Thres	580 (const.)	580 (const.)
	Bcl Tc	250 (const.)	250 (const.)
	Bcl Gain	511 (const.)	511 (const.)
Normal 1	Nor1 Bright	038	038
	Nor1 Cont	058	058
	Nor1 Color	042	042
	Nor1 Sharp	032	032
	Nor1 Tint	032	032
Normal 2	Nor2 Bright	038	038
	Nor2 Cont	038	038
	Nor2 Color	038	038
	Nor2 Sharp	032	032
	Nor2 Tint	032	032
Sound	Dolby 3411	N0	YES
OSD	OSD Contrast	400 (const.)	400 (const.)
	OSD Bright	000 (const.)	000 (const.)
Opt2.	Text Gain	YES	YES
	Tilt Option	YES	YES
	Transparent	NO	NO
	Vertical Angle	-769 (const.)	-769 (const.)
	Vertical Bow	-769 (const.)	-769 (const.)

* Tuner is	
DW	DAEWOO/PARTSNIC/SAMSUNG
PHI	PHILIPS
SIE	SIEL

■ AFT

Standard B/G, D/K, Iand L

1) Set a Signal Generator with
   - RF FREQUENCY = 38.9 MHz,
   - RF OUTPUT LEVEL = 80 ±5dBuV
   - Pattern = Color Bar
   - System = PAL-B/G
2) Connect the Signal Generator RF Output to TP2 (Tuner IF Output).
   There must be no signal input to the tuner.
3) Set the L103 to TP1(I101, #22) with DC Voltage to 2.5V ±0.1V

■ RF AGC

1) Set a TV Signal Generator(e.g. PM5418)with
   - RF FREQUENCY : 503.25 MHz, CH 25
   - RF OUTPUT LEVEL : ① 60 dBuV(TECC2949PG35W:Samsung/DT5-BF18D:Partsnic)
     ② 60 dBuV(UV1316/A:Philips/EL2782/105-B-Siel)
   - Pattern = Color Bar(or Philips patten)
2) Connect the Signal Generator RF output to Tuner input terminal.
   Connect a Oscilloscope probe(or Digital Multi-meter) to P101(Tuner AGC input).
3) Set the voltage level to ① 3.0V ± 0.1Vdc, ② 2.5V ±0.1Vdc by adjusting the RB02 (Variable Resistor).

■ SCREEN (G2)

1) Set a Pattern Generator with - RF Frequency : 210.25MHz (10CH)
   - Pattern : RETMA
2) Select the “G2” in Menu
3) And a Horizontal Line will appear on the screen.
4) Adjust the SCREEN VOLUME on FBT barely to see the Horizontal Line.
5) Press the PR UP/DOWN keys to finish the SCREEN adjustment.

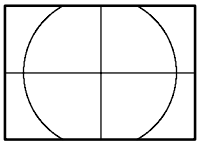
■ FOCUS

1) Apply a RETMA PATTERN signal.
2) Adjust the FOCUS VOLUME on FBT to obtain optimal resolution.

■ GEOMETRY

1. VERTICAL SLOPE (Fixed : Adjust if need be)

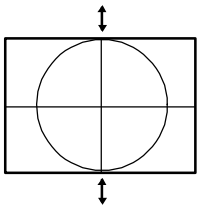
1) Apply a RETMA PATTERN Signal.
2) Set the TV to Normal I mode.
3) Adjust the higher semicircle and the lower semicircle to be the same, with the V.Slope by volume Up/Down keys.



2. VERTICAL CENTER

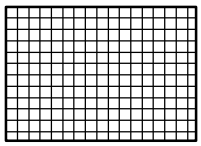
1) Apply a RETMA PATTERN Signal.
2) Set the TV to Normal I mode.
3) Adjust the center of the picture with the V.Center by volume Up/Down keys.

3. VERTICAL SIZE



* The VERTICAL CENTER adjustment has to be done in advance.
1) Apply a RETMA PATTERN Signal.
2) Set the TV to Normal I mode.
3) Adjust the VERTICAL SIZE of the picture with the select V.size by volume UP/DOWN keys.

4. VERTICAL S-CORRECTION (Fixed : Adjust if need be)



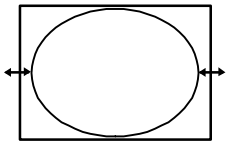
1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the S-CORRECTION to obtain the same distance between horizontal lines with the S.Curve by volume UP/DOWN keys.

5. HORIZONTAL CENTER

1) Apply a RETMA PATTERN Signal.
2) Adjust picture centering with the select H.Center by volume UP/DOWN keys.

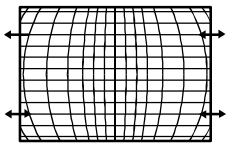
■ EW

1. WIDTH



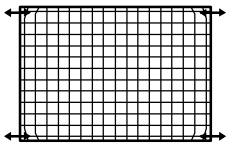
1) Apply a RETMA PATTERN Signal.
2) Adjust the horizontal width to make a perfect circle with the select H.Width by volume UP/DOWN keys.

2. PARA



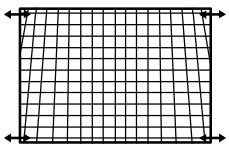
1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the vertical line to straight with the select E.W Para by volume UP/DOWN keys.

3. CORNER (Fixed : Adjust if need be)



1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the vertical line to straight with the select EW.Cor T by volume UP/DOWN keys.

4. SYMMETRY (Fixed : Adjust if need be)



1) Apply a CROSSHATCH PATTERN Signal.
2) Adjust the symmetrical balance to be suitable with the select EW Sym by volume UP/DOWN keys.

■ WHITE BALANCE

1. RGB Reference R
2. Beam Reference LOW (288, 301 : 10Cd/ m^2)
   HIGH (288, 301 : 100Cd/ m^2)
3. Adjust G, B Gain with select Menu G,B of BIAS, DRIVE of select Menu so that R, G, B Bars are on the center position of the analog meter. If R Analog meter is not on center, control the Brightness +/- of user Remocon so as R Analog meter to be on the center position.

■ SUB BRIGHT

1. Pattern : Retma
2. Adjust the SUB BRIGHT with the select Sub Bri by volume UP/DOWN keys. so that only H-Center parts of picture can be seen.

■ DOUBLE TEXT CENTER

1. Pattern : Pattern RED
2. Select Menu
3. Select DT in SVC menu time to see the Double Text Picture. (Left : RF Picture, Right : Text Picture)
4. Change the Double Text control keys volume UP/DOWN keys so that the left edge of text picture concur with the right edge of RF picture.

■ WIDE MODE

1. Locate the cursor on 'Wide' in SVC Menu.
2. 'Yes' changes the display to 16:9 mode.
3. 'No' change the display to 4:3 mode.

■ TUNER SELECTION

1. DWE : Partsnic Tuner or Samsung Tuner
2. PHI : Philips Tuner
3. SIE : Siel Tuner

■ FLAT MODE

1. Locate the cursor on 'FLAT' in SVC Menu.
2. 'Yes' changes the display to FLAT CRT mode.
3. 'No' change the display to Normal CRT mode.

■ SVM (Scan Velocity Modulation)

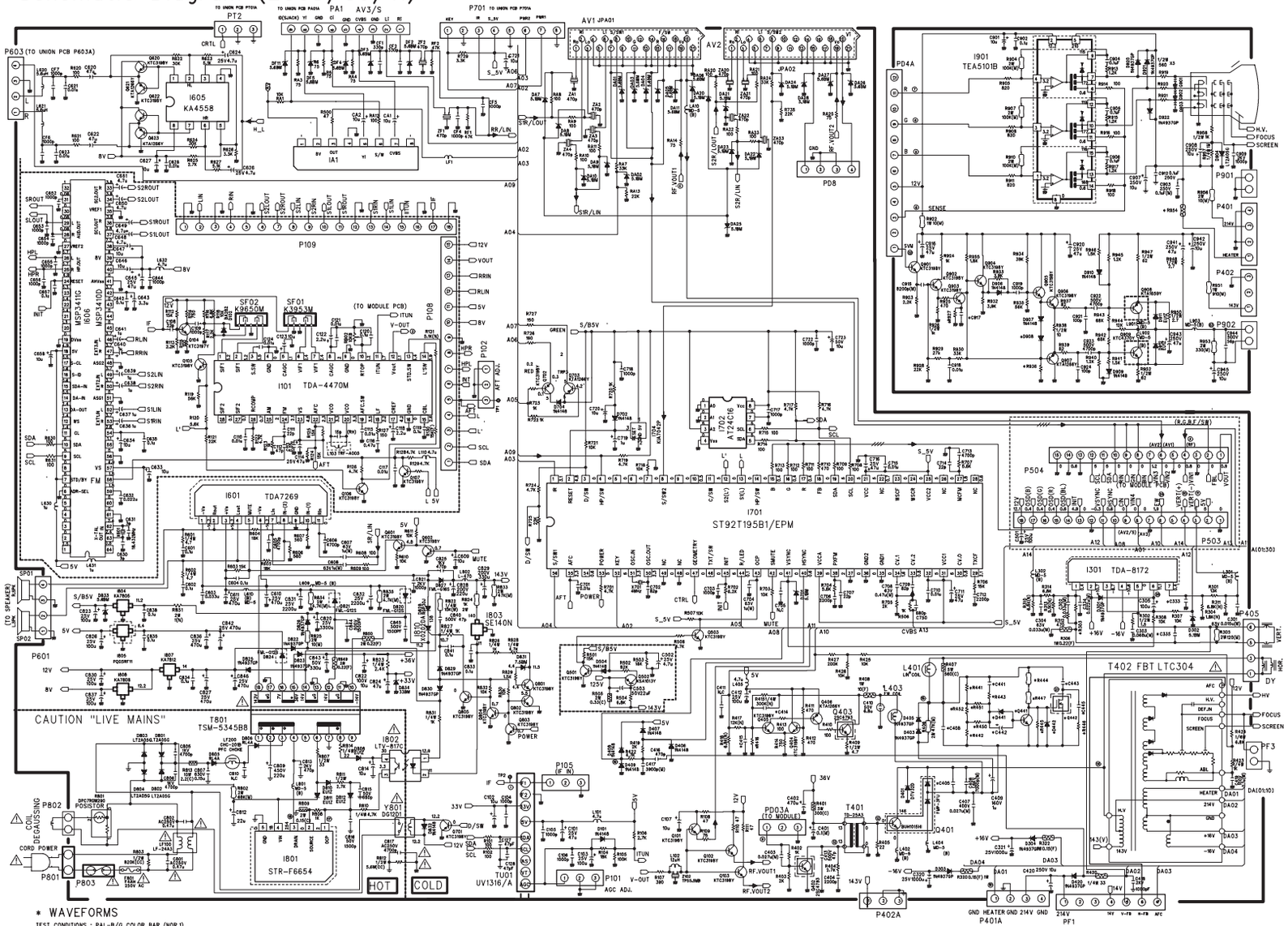
1. SVM SVG : SVM Gain
2. SVM SVD : SVM Differentiator delay (0 = filter off)
3. SVM SVDEL : Delay of SVMOUT in steps of 12.5nS
2. SVM SVCOR : SVM coring value

■ BCL (Beam Current Limit)

1. BCL Thres : BCL threshold current
2. BCL TC : BCL time constant
3. BCL Gain : BCL loop Gain

SCHEMATIC DIAGRAM

Schematic Diagram (2003/06/11)



NOTE:
1. RESISTANCE IS SHOWN IN OHM. K=1000, M=1000000
2. UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITOR VALUES ARE EXPRESSED IN uF.
3. VOLTAGES READ WITH "VTVM" FROM POINT INDICATED TO CHASSIS GROUND USING A COLOR BAR SIGNAL WITH ALL CONTROLS AT NORMAL LINE 230V AC VOLTAGE READINGS SHOWN ARE NORMAL VALUES AND MAY VARY +20% EXCEPT H.V.
4. THIS CIRCUIT DIAGRAM IS A STANDARD ONE CIRCUIT PRINTED MAY BE SUBJECT TO CHANGE FOR PRODUCT IMPROVEMENT WITHOUT PRIOR NOTICE.

WARNING:
BEFORE SERVICING THE CHASSIS, READ "X-RAY RADIATION", "SAFETY PRECAUTION", AND "PRODUCT SAFETY NOTICE" IN SERVICE MANUAL.

CAUTION TO SERVICE TECHNICIANS:
BEFORE RETURNING THE RECEIVER TO CUSTOMER, LEAKAGE CURRENT OR RESISTANCE MEASUREMENTS SHOULD BE PERFORMED TO DETERMINE THAT EXPOSED PARTS ARE PROPERLY INSULATED FROM THE SUPPLY CIRCUIT.

RESISTOR

CARBON FILM	
FR W-OXIDE	(W)
CARBON COMP	(CC)
FUSIBLE	(F)
CEMENT	(C)
M METAL FILM(IN)	(N)

CAPACITOR

ELECTRO	
CERAMIC	
CERAMIC CH	(CH)
ELECTRO NONPOLAR	(NP)
MYLAR	(M)

COIL

PEAKING	
CHOKE	(C)
BEAD	(B)

THE DIFFERENT PARTS (*)

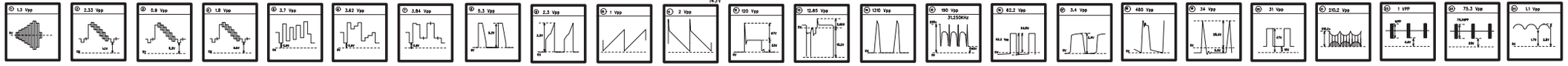
LOC.	DWL-28W8ZLP/ZZP	DWL-28W8ZLS/ZZS	DWL-28W8ZLF/ZZF	DTL-29U8ZLP/ZZP	DTL-29U8ZLS/ZZS	DTL-29U8ZLF/ZZF
CRT	W66EJY011X121	A66QDE993X985	W66ERF022X044	A68EJZ011X121	A68QCP893X001	A68ERF001X044
C333	100V 0.015MF J	100V 0.039MF J	100V 0.056MF J	100V 0.015MF J	100V 0.039MF J	100V 0.015MF J
C335	100V 0.22MF J	100V 0.22MF J	X	100V 0.22MF J	100V 0.22MF J	X
C405	1.6KV BUP 4700PF	1.6KV BUP 4300PF	1.6KV BUP 4300PF	1.6KV BUP 4700PF	1.6KV BUP 4300PF	1.6KV BUP 4300PF
C408	400V PU 0.27MF	400V PU 0.22MF	400V PU 0.22MF	400V PU 0.27MF	400V PU 0.22MF	400V PU 0.22MF
L403	CH-101A	CH-101A	CH-101A	CH-161A	CH-161A	CH-161A
C411	X	50V 0.022MF Z	50V 0.022MF Z	X	50V 0.022MF Z	50V 0.022MF Z
C414	500V 100PF K	X	X	500V 100PF K	X	X
C415	50V 0.022MF Z	X	X	50V 0.022MF Z	X	X
C443	400V 0.12MF (M)	400V 0.18MF (M)	400V 0.18MF (M)	400V 0.12MF (M)	400V 0.18MF (M)	400V 0.18MF (M)
C917	50V B 390PF K	50V B 560PF K	50V B 390PF K	50V B 390PF K	50V B 560PF K	50V B 390PF K
R303	1/4 1.30K OHM (N)	1/4 1.30K OHM (N)	1/4 1.30K OHM (N)	1/4 2.0K OHM (N)	1/4 2.0K OHM (N)	1/4 2.0K OHM (N)
R416	1/6 75.0K OHM (N)	1/6 75.0K OHM (N)	1/6 100.0K OHM (N)	1/6 100.0K OHM (N)	1/6 100.0K OHM (N)	1/6 100.0K OHM (N)
R450	1/4 3.3K OHM (N)	1/4 3.3K OHM (N)	1/4 3.3K OHM (N)	1/4 2.4K OHM (N)	1/4 2.4K OHM (N)	1/4 3.3K OHM (N)
R451	1/4 6.8K OHM (N)	1/4 6.8K OHM (N)	1/4 6.8K OHM (N)	1/4 7.5K OHM (N)	1/4 7.5K OHM (N)	1/4 6.8K OHM (N)
R927	1/6 120 OHM J	1/6 220 OHM J	1/6 120 OHM J	1/6 120 OHM J	1/6 220 OHM J	1/6 120 OHM J
R936	1/6 10K OHM J	X	1/6 10K OHM J	1/6 10K OHM J	X	1/6 10K OHM J
R954	1W 3.6 OHM J	2W 7.5 OHM J	1W 8.2 OHM J	1W 3.6 OHM J	2W 7.5 OHM J	2W 7.5 OHM J
D908	1N4148	JUMPER	1N4148	1N4148	JUMPER	1N4148
SPEAKER	SP-58126F	SP-58126F	SP-58126F	SP-78128F02	SP-78128F02	SP-78128F02
RCD54	1/10 430 OHM J	1/10 560 OHM J	1/10 430 OHM J	1/10 430 OHM J	1/10 560 OHM J	1/10 430 OHM J

PRODUCT SAFETY NOTE :
THE COMPONENTS MARKED WITH ⚠ ARE IMPORTANT FOR MAINTAINING.
THE SAFETY OF THE SET AND SHOULD BE REPLACED ONLY WITH TYPES.
IDENTICAL TO THOSE IN THE ORIGINAL OR SPECIFIED ONE IN THE PART LIST.
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

S/N : 4859807393

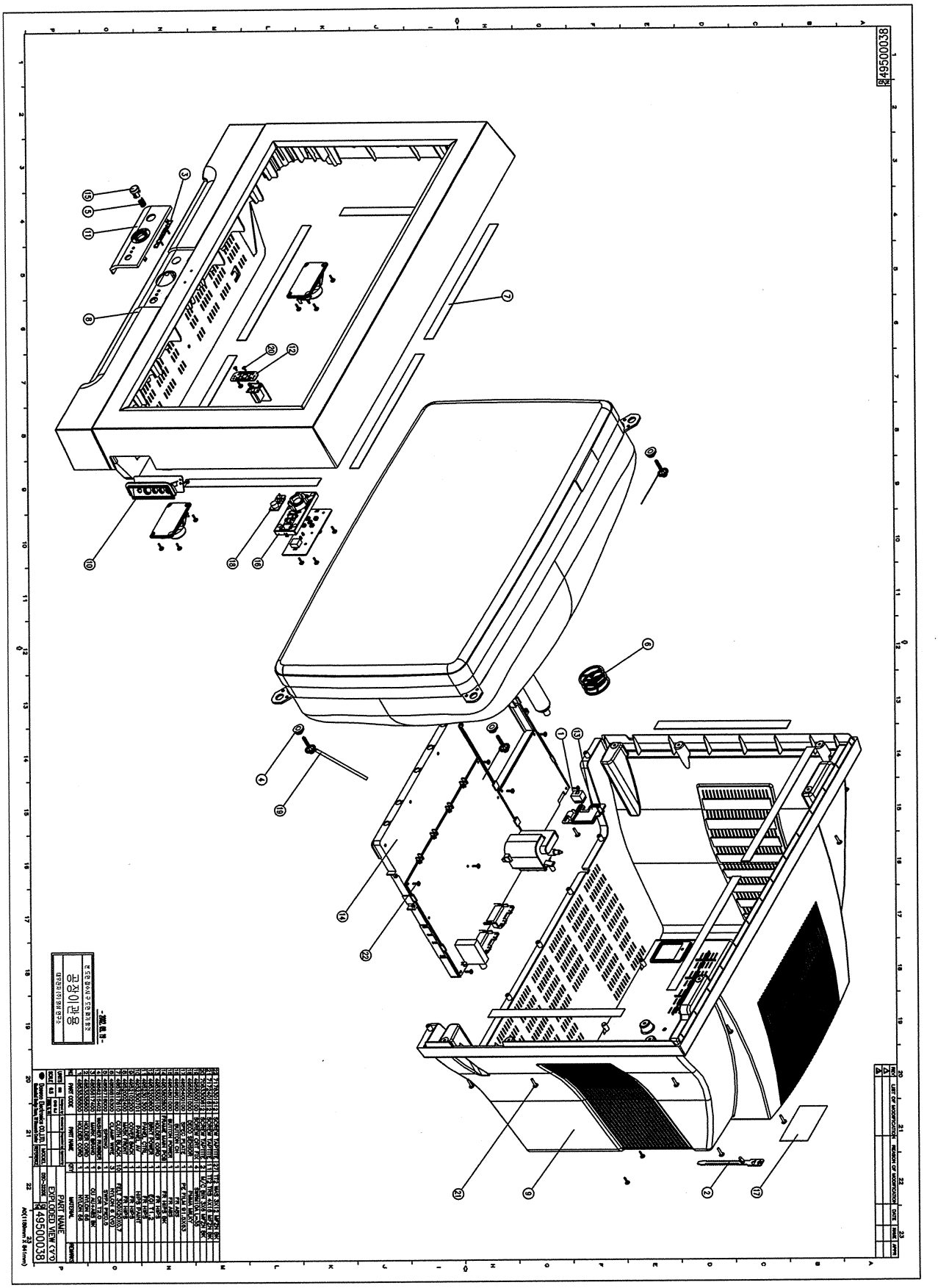
* WAVEFORMS

TEST CONDITIONS : PAL-B/G COLOR BAR (NOR.1)



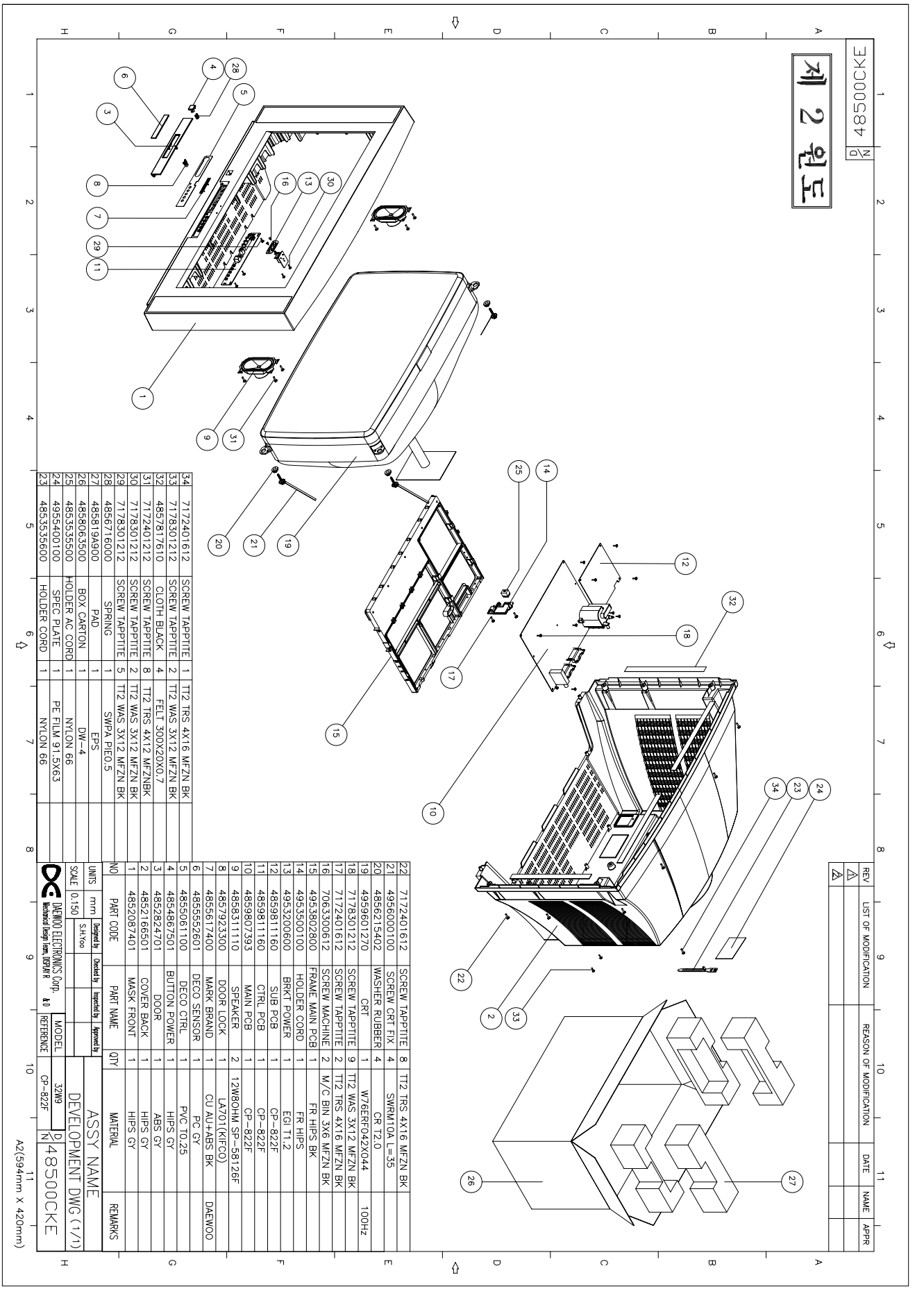
EXPLODED VIEW

DTA-3220ZZ/DTA-3220ZL



EXPLODED VIEW

DTA-32W9ZZ/DTA-3220ZL



NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
1	4852087401	MASK FRONT	1	HIPS GY	
2	4852166501	COVER BACK	1	HIPS GY	
3	4852824701	DOOR	1	ABS GY	
4	4854867501	BUTTON POWER	1	HIPS GY	
5	4855061100	DECO CTRL	1	PVC T0.25	
6	4855552601	DECO SENSOR	1	PC GY	
7	4855617400	MARK BRAND	1	CU AU+ABS BK	DAEWOO
8	4857923300	DOOR LOCK	1	LA701(KKFCO)	
9	4858311110	SPEAKER	2	12W8OHM SP-58126F	
10	4859807393	MAIN PCB	1	CP-822F	
11	4859811160	CTRL PCB	1	CP-822F	
12	4859811160	SUB PCB	1	CP-822F	
13	4953200600	BRKT POWER	1	EGI T1.2	
14	4953500100	HOLDER CORD	1	FR HIPS	
15	4953802800	FRAME MAIN PCB	1	FR HIPS BK	
16	7063300612	SCREW MACHINE	2	M/C BIN 3X6 MFZN BK	
17	7172401612	SCREW TAPPTITE	2	TT2 TRS 4X16 MFZN BK	
18	7178301212	SCREW TAPPTITE	9	TT2 WAS 3X12 MFZN BK	
19	4959601270	CRT	1	W76ERF0422X044	100Hz
20	4856215402	WASHER RUBBER	4	CR T2.0	
21	4956000100	SCREW CRT FIX	4	SWRM10A L=35	
22	7172401612	SCREW TAPPTITE	8	TT2 TRS 4X16 MFZN BK	

NO	PART CODE	PART NAME	QTY	MATERIAL	REMARKS
23	4853535600	HOLDER CORD	1	NYLON 66	
24	4935400100	SPEC PLATE	1	PE FILM 91.5X63	
25	4853535500	HOLDER AC CORD	1	NYLON 66	
26	4858063500	BOX CARTON	1	DW-4	
27	4858819A900	PAD	1	EPS	
28	4856716000	SPRING	1	SWPA PIE0.5	
29	7178301212	SCREW TAPPTITE	5	TT2 WAS 3X12 MFZN BK	
30	7178301212	SCREW TAPPTITE	2	TT2 WAS 3X12 MFZN BK	
31	7172401212	SCREW TAPPTITE	8	TT2 TRS 4X12 MFZNBK	
32	4857817610	CLOTH BLACK	4	FELT 300X200X0.7	
33	7178301212	SCREW TAPPTITE	2	TT2 WAS 3X12 MFZN BK	
34	7172401612	SCREW TAPPTITE	1	TT2 TRS 4X16 MFZN BK	

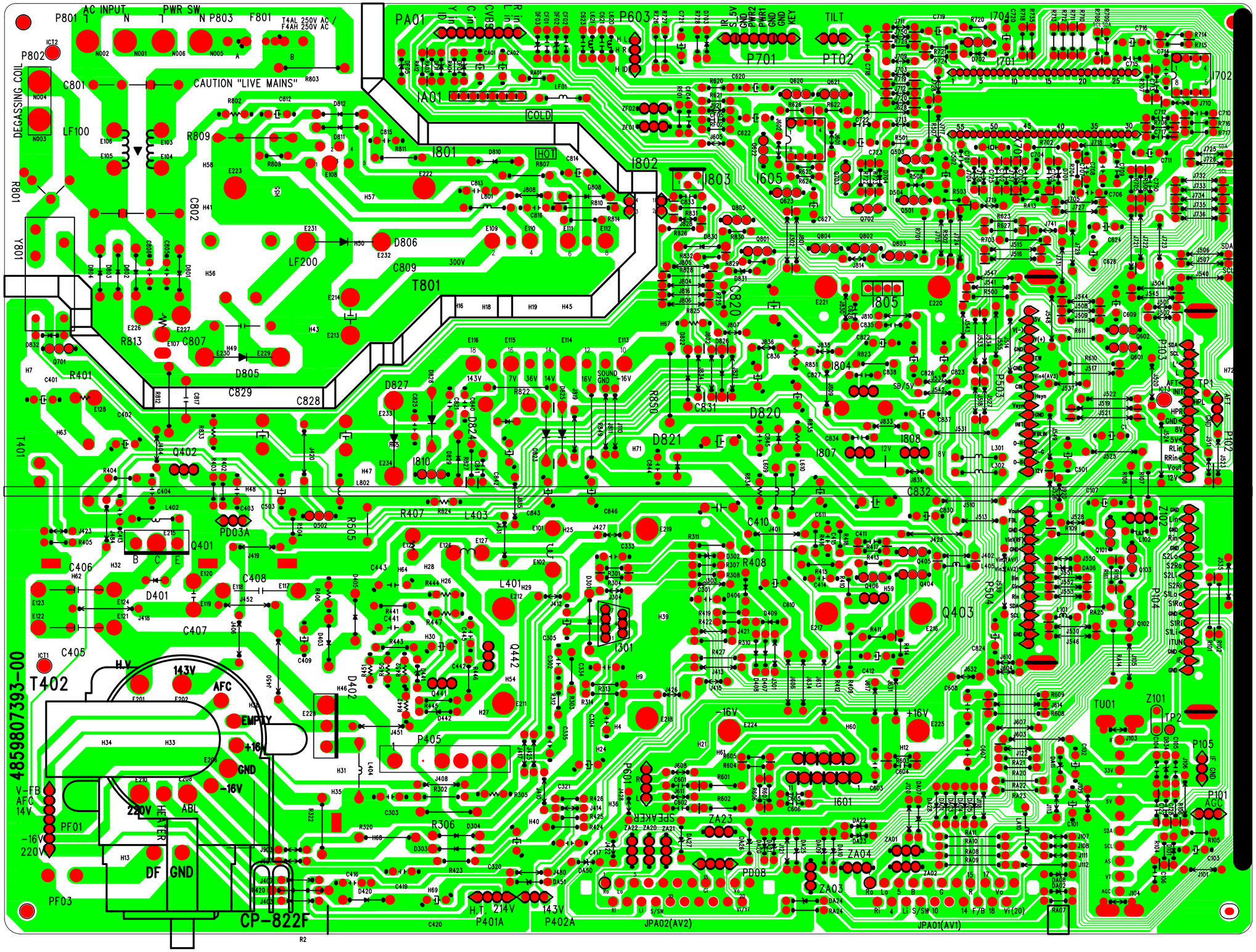
REV	LIST OF MODIFICATION	REASON OF MODIFICATION	DATE	NAME	APPR

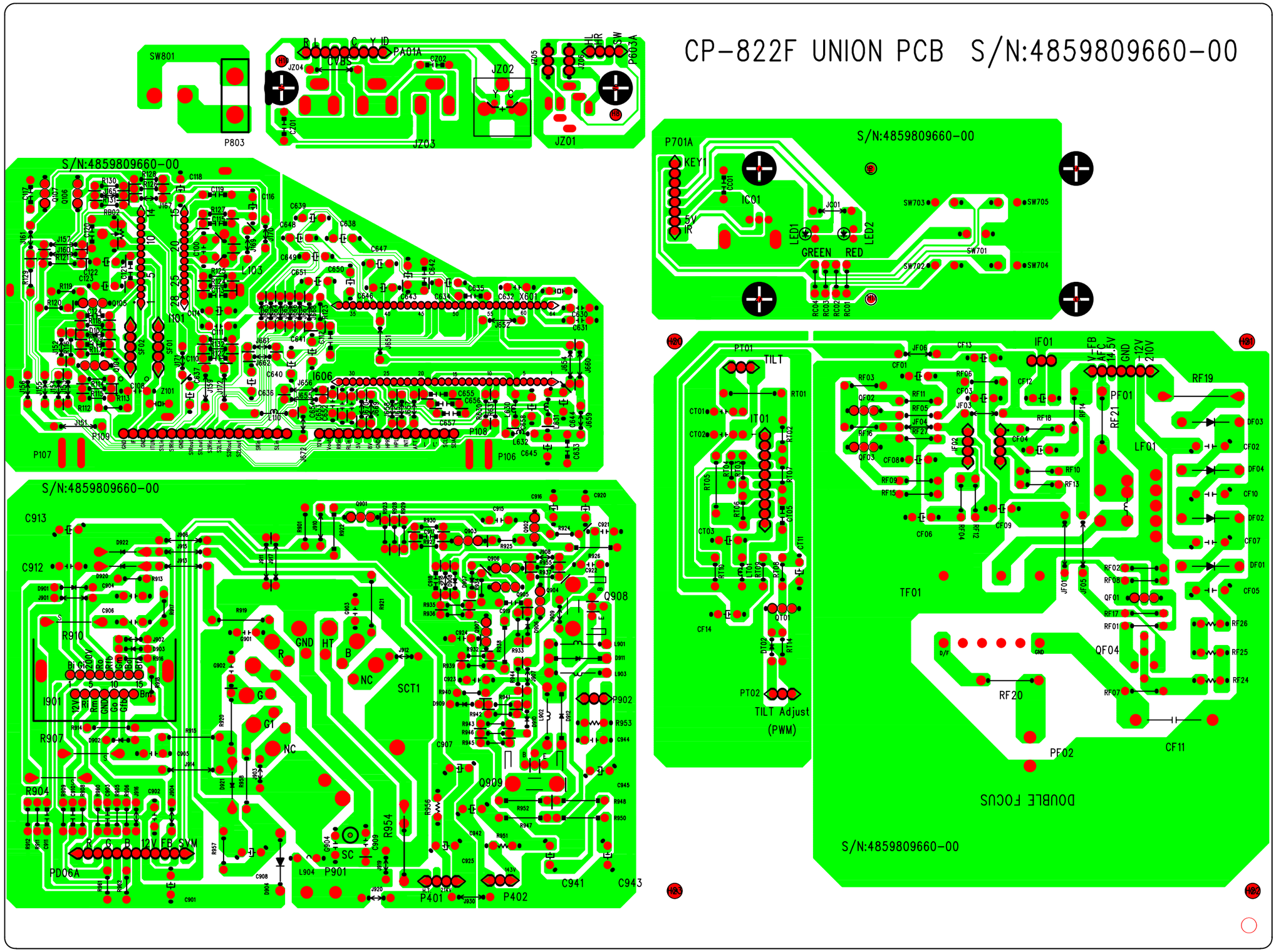
UNITS: mm | SCALE: 0.150 | Designed by: S.H.Yoo | Checked by | Inspected by | Approved by

DAEWOO ELECTRONICS Corp. Mechanical Design team. DDTAM R&D

MODEL: 32W9 | REFERENCE: CP-822F | D/N: D | 48500CKE

PRINTED CIRCUIT BOARD

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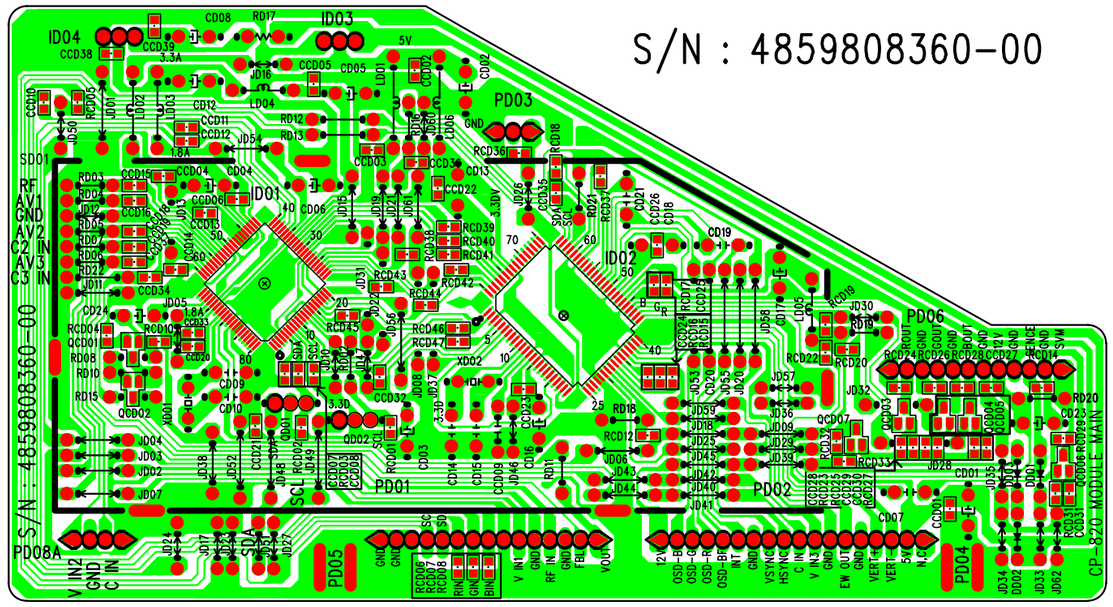
P803
JZ03
JZ01
JZ02
P701A
KEY1
IC01
LED1
LED2
GREEN
RED
SW703
SW705
SW701
SW702
SW704
I101
I103
I606
P107
P109
P106
P108
X601
S/N:4859809660-00
C913
C912
R910
I901
R907
R904
PD06A
P901
P401
P402
Q908
Q909
SCT1
S/N:4859809660-00
PT01
TILT
IT01
PT02
TILT Adjust
(PWM)
IF01
PF01
LF01
TF01
PF02
RF19
RF20
QF04
DOUBLE FOCUS
S/N:4859809660-00

246 X 246

INS3

INS1

S/N : 4859808360-00



INS2

Part List

Caution In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information, please refer to PPL(Prats Price List) in Service information Center (http://svc.dwe.co.kr)

Caution ⚠ is a recommendable part for stock.
Ⓡ is safety component, so it must be used the same component.

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
ZZ100	48B3822D06	TRANSMITTER REMOCON	R-22D06 (AAA)	
ZZ110	PTACPWD546	ACCESSORY AS	DTL-29U8ZLF	
M821	4858213801	BAG INSTRUCTION	L.D.P.E T0.05X250X400	
ZZ120	PTBCSHD764	COVER BACK AS	DTA-3220ZZF	
M211	4952102201	COVER BACK	HIPS	
M781	4857817610	CLOTH BLACK	FELT 300X20X0.7	
ZZ130	PTPKCPD764	PACKING AS	DTA-3220ZZF	
10	6520010100	STAPLE PIN	AUTO W65	
M681	4856812400	BAND PP AUTO	T1.1XW17mmXL770M	
M801	4958002200	BOX CARTON	DW-4	
M811	4958102500	PAD	EPS	
M821	4958200701	BAG P.E	FOAM T0.5X1880X1380	
ZZ131	58GD000003	COIL DEGAUSSING	DC-3200(E)	⚠
ZZ132	49519A0110	CRT GROUND NET	DSC-3210E	
ZZ140	PTCACAD764	CABINET AS	DTA-3220ZZF	
M201A	4956000100	SCREW CRT FIX	SWRM10A L=35	
M201B	4856215401	WASHER RUBBER	CR T1.0	
M201C	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M201D	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M211A	7172401612	SCREW TAPPTITE	TT2 TRS 4X16 MFZN BK	
M211B	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M211C	7172401612	SCREW TAPPTITE	TT2 TRS 4X16 MFZN BK	
M211D	7172401612	SCREW TAPPTITE	TT2 TRS 4X16 MFZN BK	
M231	4952301301	PANEL CTRL	HIPS PAINT	
M353	4853535600	HOLDER CORD	NYLON 66	
M481	4954801001	BUTTON POWER	ABS PAINT	
M481A	4856716000	SPRING	SWPA PIE0.5	
M491A	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M541	4955400100	SPEC PLATE	P.E FILM 91.5X63	
M681	4856812001	TIE CABLE	NYLON66 DA100	
M682	4856816300	CLAMP WIRE	NYLON 6 (V0)	
P405	4850706N14	CONNECTOR	YFSH500-06+YH396V+ULW=600	
P601A	4850704S30	CONNECTOR	YH025-04+YRT205+ULW700600	
SP01	4858315610	SPEAKER	SP-5090F13	
SP01A	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
SP02	4858315610	SPEAKER	SP-5090F13	
SP02A	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
V901	4959601270	CPT	W76ERF042X044	Ⓡ⚠
ZZ200	PTFMSJD764	MASK FRONT AS	DTA-3220ZZF	Ⓡ
M201	4952002401	MASK FRONT	HIPS PAINT	
M201D	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M201E	4857817610	CLOTH BLACK	FELT 300X20X0.7	
M561	4855617400	MARK BRAND	CU AU+ABS BK	
ZZ202	PTU1MSD764	PCB UNION-1 MANUAL AS	DTA-3220ZZF	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
10	2193102005	SOLDER BAR	SN:PB=63:47 S63S-1320	
CF11	CMYH3D752J	C MYLAR	2KV BUP 7500PF J	
I101	1TDA4470M-	IC IF	TDA4470-M	
I606	1MSP3410V3	IC SOUND PROCESSOR	MSP3410G-PP-B8-V3	
I901	PTC2SW5403	HEAT SINK ASS'Y	1STV5109 + 7174300811	
00001	1STV5109	IC VIDEO AMP	STV5109	
0000A	4857025403	HEAT SINK	AL050P-H24 T=2	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
IC01	1KSM9HP -	IC PREAMP	KSM-9HP	
IF01	1MC7812 -	IC REGULATOR	MC7812 12V 1A (KA7812)	
IF02	1KA4558 -	IC AMP	KA4558	
IT01	1LA6515 -	IC OP AMP	LA6515	
JZ01	4859105240	JACK PHONE	LGT1516-0100	
JZ02	4859105340	JACK S-VHS	YKF51-5359	
JZ03	4859105450	JACK PIN BOARD	YSC03P-4120-9S	
L103	58E0000041	COIL AFT	TRF-A005	
LED1	DSLR342MC3	LED	SLR-342MC3	
LED2	DSLR342VC3	LED	SLR-342VC3	
LF01	58CD000009	COIL CHOKE	920UH	
M232	4952300701	PANEL AV	HIPS PAINT	
M232A	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M321	4953200600	BRKT POWER	EGI T1.2	
M321A	7063300612	SCREW MACHINE	M/C BIN 3X6 MFZN BK	
M491	4954901601	BUTTON CH	ABS PAINT	
M551	4955501000	DECO SENSOR	GPPS	
M684	4856812001	TIE CABLE	NYLON66 DA100	
P106	4853946000	BRKT JUMPER A	SECC T1.0 (VCR-63DB)	
P107	4853946000	BRKT JUMPER A	SECC T1.0 (VCR-63DB)	
P108	4859279520	CONN WAFER	TAC-L15P-A3 (ANGLE)	
P109	4859279820	CONN WAFER	TAC-L18P-A3 (ANGLE)	
P603A	4850704S04	CONNECTOR	YH025-04+YST025+ULW=400	
P701A	4850708S02	CONNECTOR	YH025-08+YST025+ULW=300	
P803	4850702S09	CONNECTOR	BL102NG+MXH40058-02=300	
P901	4859238620	CONN WAFER	YPW500-02	
P902	4850703N24	CONNECTOR	EHR-03+YBNH250-03+ULW=200	
PA01A	4850709N07	CONNECTOR	YH025-09+YBNH250-09+USW=600	
PD06A	4850712N02	CONNECTOR	YH025-12+YBNH250+USW=500	
PF02	4859238620	CONN WAFER	YPW500-02	
PF3	4850702N06	CONNECTOR	YPH500-02+YLT500+ULW=200	
PT02	4850703S21	CONNECTOR	YH025-03+YBNH250+ULW=600	
Q908	PTF2SW6900	HEAT SINK ASS'Y	TKTA1659AY + 7178301011	
00001	TKTA1659AY	TR	KTA1659AY	
0000A	4857026900	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
Q909	PT62SW6900	HEAT SINK ASS Y	TKTC4370AY + 7178301011	
00001	TKTC4370AY	TR	KTC4370AY	
0000A	4857026900	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
QF04	T4636LSRB-	TR	2SC4636LS-RB	
SCT1	4859303730	SOCKET CRT	ISD-07S	
SF01	5PK3953M	FILTER SAW	K3953M	
SF02	5PK9650M	FILTER SAW	K9650M	
SW801	5S40000003	SW POWER PUSH	SS-160-7-G	
TF01	50D28A1 -	TRANS DRIVE	TD-28A1	
ZZ200	PTU1J0D764	PCB UNION RHU AS	DTA-3220ZZF	
C908	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C909	CCXB3D102K	C CERA	2KV B 1000PF K (TAPPING)	
C913	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C922	CCXB2H472K	C CERA	500V B 4700PF K (TAPPING)	
C923	CCXB2H472K	C CERA	500V B 4700PF K (TAPPING)	
C925	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C941	CEXF2C470V	C ELECTRO	160V RSS 47MF (13X25) TP	
C942	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C943	CEXF2C470V	C ELECTRO	160V RSS 47MF (13X25) TP	
C945	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
CF02	CMXE2J333J	C MYLAR	630V PU 0.033MF J (TP)	
CF05	CMXE2J333J	C MYLAR	630V PU 0.033MF J (TP)	
CF07	CMXE2J333J	C MYLAR	630V PU 0.033MF J (TP)	
CF10	CMXE2J333J	C MYLAR	630V PU 0.033MF J (TP)	
ZZ200	PTU1JBD764	PCB UNION M-10 AS	DTA-3220ZZF	
P401	485923172S	CONN WAFER	YW025-04 (STICK)	
P402	485923162S	CONN WAFER	YW025-03 (STICK)	
PF01	485923202S	CONN WAFER	YW025-07 (STICK)	
PT01	485923162S	CONN WAFER	YW025-03 (STICK)	
R904	RS02Z563JS	R M-OXIDE FILM	2W 56K OHM J SMALL	
R907	RS02Z563JS	R M-OXIDE FILM	2W 56K OHM J SMALL	
R910	RS02Z563JS	R M-OXIDE FILM	2W 56K OHM J SMALL	
R954	RF02Z249J-	R FUSIBLE	2W 2.4 OHM J (TAPPING)	
RF19	RF02Z479J-	R FUSIBLE	2W 4.7 OHM J (TAPPING)	
RF20	RS01Z472J-	R M-OXIDE FILM	1W 4.7K OHM J (TAPPING)	
RF21	RS01Z228J-	R M-OXIDE FILM	1W 0.22 OHM J	
ZZ200	PTU1JRD764	PCB UNION RADIAL AS	DTA-3220ZZF	
C100	CXRH1H150J	C CERA	RH 50V 15PF J (TAPPING)	
C108	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C111	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C114	CEXF1E470C	C ELECTRO	25V RUS 47MF (5X11) TP	
C116	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11) TP	
C118	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C122	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C123	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C630	CXCH1H309C	C CERA	50V CH 3PF C	
C631	CXCH1H309C	C CERA	50V CH 3PF C	
C632	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C634	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C636	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C637	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C638	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C639	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C640	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C641	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C643	CEXF1H339V	C ELECTRO	50V RSS 3.3MF (5X11) TP	
C644	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C645	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C646	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C647	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C648	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C649	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C650	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C651	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C652	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C653	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C654	CCXB1H102K	C CERA	50V B 1000PF K (TAPPING)	
C658	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C901	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C902	CMXM2A104K	C MYLAR	100V 0.1MF K (TP)	
C904	CXSL2H471J	C CERA	500V SL 470PF J (TAPPING)	
C905	CXSL2H471J	C CERA	500V SL 470PF J (TAPPING)	
C906	CXSL2H471J	C CERA	500V SL 470PF J (TAPPING)	
C912	CMXL2E104J	C MYLAR	MEU 250V 0.1MF J	
C915	CMXM2A822J	C MYLAR	100V 8200PF J (TP)	
C916	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C920	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C921	CCXB1H101K	C CERA	50V B 100PF K (TAPPING)	
C924	CCXB1H101K	C CERA	50V B 100PF K (TAPPING)	
C944	CXSL2H560J	C CERA	500V SL 56PF J (TAPPING)	
CF01	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP	
CF04	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
CF06	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
CF08	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
CF09	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
CF12	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
CF13	CEXF1C221V	C ELECTRO	16V RSS 220MF (8X11.5) TP	
CF14	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
CT01	CMXL1J474J	C MYLAR	63V MEU 0.47MF J	
CT02	CMXL1J474J	C MYLAR	63V MEU 0.47MF J	
CT03	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
CT11	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
G901	4SG0DX0001	SPARK GAP	SSG-102-A1(1.0KV) TAP	
G902	4SG0DX0001	SPARK GAP	SSG-102-A1(1.0KV) TAP	
G903	4SG0DX0001	SPARK GAP	SSG-102-A1(1.0KV) TAP	
G904	4SG0DX0001	SPARK GAP	SSG-102-A1(1.0KV) TAP	
JZ05	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
JZ06	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
L904	58C0000116	COIL BEAD	HC-3550R	
Q104	TKTC3197	TR	KTC3197 (TP)	
Q105	TKTC3198Y-	TR	KTC3198Y	
Q106	TKTC3198Y-	TR	KTC3198Y	
Q107	TKTC3198Y-	TR	KTC3198Y	
Q901	TKTC3198Y-	TR	KTC3198Y	
Q902	TKTC3198Y-	TR	KTC3198Y	

Part List

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
Q903	TKTC3198Y-	TR	KTC3198Y	
Q904	TKTC3198Y-	TR	KTC3198Y	
Q905	TKTC3198Y-	TR	KTC3198Y	
Q906	TKTC3198Y-	TR	KTC3198Y	
Q907	TKTA1266Y-	TR	KTA1266Y (TP)	
QF01	TKTA1266Y-	TR	KTA1266Y (TP)	
QF02	TKTA1266Y-	TR	KTA1266Y (TP)	
QF03	TKTC3198Y-	TR	KTC3198Y	
QT01	TKTC3198Y-	TR	KTC3198Y	
R951	RN01B102JS	R METAL FILM	1W 1K OHM J SMALL	
R953	RN02B331JS	R METAL FILM	2W 330 OHM J SMALL	
R956	RN02B100JS	R METAL FILM	2W 10 OHM J SMALL	
RB02	RV5426103P	R SEMI FIXED	ENV-DJAA03B14 10K OHM B	
RF24	RN02B683JS	R METAL FILM	2W 68K OHM J SMALL	
RF25	RN02B333JS	R METAL FILM	2W 33K OHM J SMALL	
RF26	RN02B683JS	R METAL FILM	2W 68K OHM J SMALL	
SW701	5S50101Z90	SW TACT	THVV502GDA	
SW702	5S50101Z90	SW TACT	THVV502GDA	
SW703	5S50101Z90	SW TACT	THVV502GDA	
SW704	5S50101Z90	SW TACT	THVV502GDA	
SW705	5S50101Z90	SW TACT	THVV502GDA	
X601	5XEX18R43E	CRYSTAL QUARTZ	HC-49/U 18.432MHZ 30PPM TP	
ZZ200	PTU1JAD764	PCB UNION AXIAL AS	DTA-3220ZZF	
10	2TM14006LB	TAPE MASKING	3M #232 6.0X2000M	
20	2TM10006LB	TAPE MASKING	3M #232-MAP-C 6.2X2000M	
A001	4859809660	PCB UNION	330X246 D1B	
C109	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C110	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C112	CZSL1H470J	C CERA	50V SL 47PF J (AXIAL)	
C113	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C115	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C117	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C119	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C120	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C121	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C124	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C633	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C635	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C642	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C656	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C657	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C917	CCZB1H391K	C CERA	50V B 390PF K (AXIAL)	
C918	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C919	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
CC01	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
CT05	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
CZ01	CCZB1H561K	C CERA	50V B 560PF K	
CZ02	CCZB1H561K	C CERA	50V B 560PF K	
D102	DBA282	DIODE	BA282	
D904	DLT2A05G	DIODE	LT2A05G (TP)	
D906	D1N4148 -	DIODE	1N4148 (TAPPING)	
D907	D1N4148 -	DIODE	1N4148 (TAPPING)	
D908	D1N4148 -	DIODE	1N4148 (TAPPING)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
D909	D1N4148 -	DIODE	1N4148 (TAPPING)	
D910	D1N4148 -	DIODE	1N4148 (TAPPING)	
D911	DEU1Z -	DIODE	EU1Z (HIGH SPEED)	
D912	DEU1Z -	DIODE	EU1Z (HIGH SPEED)	
D920	D1N4937G	DIODE	1N4937G (TAPPING)	
D921	D1N4937G	DIODE	1N4937G (TAPPING)	
D922	D1N4937G	DIODE	1N4937G (TAPPING)	
DF01	D1N4937G	DIODE	1N4937G (TAPPING)	
DF02	D1N4937G	DIODE	1N4937G (TAPPING)	
DF03	D1N4937G	DIODE	1N4937G (TAPPING)	
DF04	D1N4937G	DIODE	1N4937G (TAPPING)	
DT02	D1N4148 -	DIODE	1N4148 (TAPPING)	
J151	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J152	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J153	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J154	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J155	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J156	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J157	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J159	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J160	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J161	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J165	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J167	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J169	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J170	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J171	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J172	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J651	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J652	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J653	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J654	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J655	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J656	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J657	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J658	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J659	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J660	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J661	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J662	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J663	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J664	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J665	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J666	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J667	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J668	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J669	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J670	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J672	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J901	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J902	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J904	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J906	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
J907	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J908	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J909	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J910	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J913	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J914	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J915	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J916	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J918	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J919	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J920	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J930	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JC01	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JF01	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JF03	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JF04	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JF05	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JF06	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JZ04	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
L110	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L630	5CPZ109M02	COIL PEAKING	1UH M (AXIAL 3.5MM)	
L631	5CPZ109M02	COIL PEAKING	1UH M (AXIAL 3.5MM)	
L632	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L901	5MC0000100	COIL BEAD	HC-3550	
L902	5MC0000100	COIL BEAD	HC-3550	
L903	5MC0000100	COIL BEAD	HC-3550	
LT01	5CPZ569K02	COIL PEAKING	5.6UH K (AXIAL 3.5MM)	
R112	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R113	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R114	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
R115	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R116	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R117	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R118	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R119	RD-AZ563J-	R CARBON FILM	1/6 56K OHM J	
R120	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R121	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R122	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R123	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R124	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R125	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R126	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R127	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
R128	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R129	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R130	RN-AZ1502F	R METAL FILM	1/6 15K OHM F	
R131	RN-AZ5101F	R METAL FILM	1/6 5.1K OHM F	
R630	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R631	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R901	RD-AZ431J-	R CARBON FILM	1/6 430 OHM J	
R905	RD-AZ271J-	R CARBON FILM	1/6 270 OHM J	
R906	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R908	RD-AZ271J-	R CARBON FILM	1/6 270 OHM J	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R909	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R911	RD-AZ271J-	R CARBON FILM	1/6 270 OHM J	
R912	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R913	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R914	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R915	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R916	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R917	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R918	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R919	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R920	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R921	RC-2Z102K-	R CARBON COMP	1/2 1K OHM K	
R922	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
R923	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R924	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R925	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R926	RD-2Z471J-	R CARBON FILM	1/2 470 OHM J	
R927	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J	
R928	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R929	RD-AZ273J-	R CARBON FILM	1/6 27K OHM J	
R930	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R932	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R933	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
R934	RD-AZ393J-	R CARBON FILM	1/6 39K OHM J	
R935	RD-AZ563J-	R CARBON FILM	1/6 56K OHM J	
R936	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R937	RD-AZ820J-	R CARBON FILM	1/6 82 OHM J	
R938	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
R939	RD-AZ820J-	R CARBON FILM	1/6 82 OHM J	
R940	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R941	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R942	RD-AZ683J-	R CARBON FILM	1/6 68K OHM J	
R943	RD-AZ683J-	R CARBON FILM	1/6 68K OHM J	
R944	RD-AZ123J-	R CARBON FILM	1/6 12K OHM J	
R945	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R946	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R947	RD-2Z620J-	R CARBON FILM	1/2 62 OHM J	
R948	RD-2Z279J-	R CARBON FILM	1/2 2.7 OHM J	
R950	RD-2Z279J-	R CARBON FILM	1/2 2.7 OHM J	
R952	RD-2Z620J-	R CARBON FILM	1/2 62 OHM J	
R955	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J	
R957	RD-4Z105J-	R CARBON FILM	1/4 1M OHM J	
R958	RD-2Z102J-	R CARBON FILM	1/2 1K OHM J	
RC01	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
RC02	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
RC03	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J	
RC04	RD-AZ132J-	R CARBON FILM	1/6 1.3K OHM J	
RF01	RD-4Z431J-	R CARBON FILM	1/4 430 OHM J	
RF02	RD-4Z561J-	R CARBON FILM	1/4 560 OHM J	
RF03	RD-4Z332J-	R CARBON FILM	1/4 3.3K OHM J	
RF04	RD-4Z682J-	R CARBON FILM	1/4 6.8K OHM J	
RF05	RD-4Z911J-	R CARBON FILM	1/4 910 OHM J	
RF06	RD-4Z221J-	R CARBON FILM	1/4 220 OHM J	

Part List

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RF07	RD-4Z182J-	R CARBON FILM	1/4 1.8K OHM J	
RF08	RD-4Z123J-	R CARBON FILM	1/4 12K OHM J	
RF09	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
RF10	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
RF11	RD-4Z911J-	R CARBON FILM	1/4 910 OHM J	
RF12	RD-4Z513J-	R CARBON FILM	1/4 51K OHM J	
RF13	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
RF14	RD-4Z820J-	R CARBON FILM	1/4 82 OHM J	
RF15	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
RF16	RD-4Z153J-	R CARBON FILM	1/4 15K OHM J	
RF17	RD-4Z272J-	R CARBON FILM	1/4 2.7K OHM J	
RF18	RD-4Z132J-	R CARBON FILM	1/4 1.3K OHM J	
RF27	RD-4Z221J-	R CARBON FILM	1/4 220 OHM J	
RT01	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
RT02	RD-AZ683J-	R CARBON FILM	1/6 68K OHM J	
RT03	RD-AZ334J-	R CARBON FILM	1/6 330K OHM J	
RT04	RD-AZ392J-	R CARBON FILM	1/6 3.9K OHM J	
RT05	RD-2Z100J-	R CARBON FILM	1/2 10 OHM J	
RT06	RD-AZ683J-	R CARBON FILM	1/6 68K OHM J	
RT07	RD-AZ563J-	R CARBON FILM	1/6 56K OHM J	
RT08	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RT09	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
RT10	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
RT14	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
ZZ290	PTMPMSD764	PCB MAIN MANUAL AS	DTA-3220ZZF	Ⓡ
10	2193102005	SOLDER BAR	SN:PB=63:47 S63S-1320	
30	2291050616	FLUX SOLDER	JS-64T3	
40	2291050301	FLUX SOLVENT	IM-1000	
C405	CMYH3C432J	C MYLAR	1.6KV BUP 4300PF J	
C406	CMYH3C702J	C MYLAR	1.6KV BUP 7000PF J	
C407	CMYE2J223J	C MYLAR	630V PU 0.022MF J	
C408	CMYE2G184J	C MYLAR	400V PU 0.18MF J	
C410	CEYD1H689W	C ELECTRO	50V RHD 6.8MF (16X35.5)	
C441	CMYL2G104J	C MYLAR	400V MEU 0.1MF J	
C443	CMXF2G124J	C MYLAR	400V MPP 0.12MF J	
C801	CL1UC3474M	C LINE ACROSS	0.47MF 1J(UCVSNDF/SV)+Q/O	
C802	CL1UC3474M	C LINE ACROSS	0.47MF 1J(UCVSNDF/SV)+Q/O	⚠
C807	CMYF2J154J	C MYLAR	630V MPP 0.15MF J	⚠
C809	CEYN2W221P	C ELECTRO	450V LHS 220MF (30X40)	
C817	CH1BFE472M	C CERA AC	AC400V 4700PF M U/C/V	⚠
C820	CEYF1E332V	C ELECTRO	25V RSS 3300MF (16X31.5)	
C828	CEYE2D221E	C ELECTRO	200V RM 220MF (18X35.5)	
C829	CEYE2D331E	C ELECTRO	200V RM 330MF	
D401	DDTV32D -	DIODE	DTV32D	
D805	DRL4A015	DIODE	RL4A-015-308	⚠
D806	DRL4A015	DIODE	RL4A-015-308	⚠
D820	DFMLG12S	DIODE	FML-G12S	
D821	DFMLG12S	DIODE	FML-G12S	
D824	PTP2SW6900	HEAT SINK ASS'Y	DFMLG12S + 7174300811	
00001	DFMLG12S	DIODE	FML-G12S	Ⓡ
0000A	4857026900	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
D827	DRGP30J -	DIODE	RGP30J DO-201AD 600V 3A	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
D828	D1N4937G	DIODE	1N4937G (TAPPING)	
F801	5FSCB4022R	FUSE CERA	SEMKO F4AH 4A 250V MF51	Ⓡ ⚠
I301	PTC2SW8218	HEAT SINK ASS'Y	1TDA8172 + 7174300811	
00001	1TDA8172	IC V-OUT	TDA8172	Ⓡ
0000A	4857028218	HEAT SINK	AL EX BK	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I601	PTA2SW8224	HEAT SINK ASS'Y	1TDA7269 7174300811	
00001	1TDA7269	IC AUDIO	TDA7269	Ⓡ
0000A	4857028224	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I605	1KA4558 -	IC AMP	KA4558	Ⓡ
I701	1ST195EPM-	IC MICOM OTP	ST92T195B1/EPM	Ⓡ
I702	1AT24C16PC	IC	AT24C16-10PC	
I801	PTG2SW8200	HEAT SINK ASS'Y	1STRF6656- + 7174301011	
00001	1STRF6656-	IC POWER	STR-F6656	Ⓡ ⚠
0000A	4857028200	HEAT SINK	AL EX BK	
0000B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
I802	1KP1010C	IC PHOTO COUPLER	KP-1010C	Ⓡ
I803	1SE140N -	IC AMP	SE140N	Ⓡ ⚠
I804	PSH2SW6900	HEAT SINK ASS Y	1KA7805 - + 7174301011	
00001	1KA7805 -	IC REGULATOR	KA7805	Ⓡ
0000A	4857026900	HEAT SINK	AL EX	
0000B	7174301011	SCREW TAPPTITE	TT2 RND 3X10 MFZN	
I805	PTA2SW7720	HEAT SINK ASS'Y	1K78R05 - + 7174300811	
00001	1K78R05 -	IC REGULATOR	KIA78R05API	
0000A	4857027720	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
I807	1MC7812 -	IC REGULATOR	MC7812 12V 1A (KA7812)	Ⓡ
I808	1KA7808 -	IC REGULATOR	KA7808	Ⓡ
I810	TX0202DA	THYRISTOR	X0202DA1BA2	
IA01	1MM1118 -	IC A/V SWITCH	MM1118	
JPA01	4959103680	JACK SCART	DSAM-0266	
JPA02	4959103680	JACK SCART	DSAM-0266	
L401	58H0000085	COIL H-LINEARITY	TRL-5R0D	
L403	58C0000130	COIL CHOKE	CH-161A	
LF100	5PLF24A3	FILTER LINE	LF-24A3	⚠
LF200	58C0000129	COIL CHOKE PFC	CPC-201B	⚠
M207	4853535500	HOLDER AC CORD	NYLON 66	
M351	4953500100	HOLDER CORD	FR HIPS	
M351A	7172401612	SCREW TAPPTITE	TT2 TRS 4X16 MFZN BK	
M381	4953802800	FRAME MAIN PCB	FR HIPS BK	
M381A	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M381B	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
M683	4856812001	TIE CABLE	NYLON66 DA100	
P103	4859281020	CONN WAFER	TAC-L15X-A3	
P104	4859281320	CONN WAFER	TAC-L18X-A3	
P401A	4850704S03	CONNECTOR	YH025-04+YST025+ULW=300	
P402A	4850703S29	CONNECTOR	YH025-03+YST025+USW=300	
P405	4859240120	CONN WAFER	YFW500-06	
P503	4859281320	CONN WAFER	TAC-L18X-A3	
P504	4859281020	CONN WAFER	TAC-L15X-A3	
P801	4859242220	CONN WAFER	YFW800-02	
P802	4859242220	CONN WAFER	YFW800-02	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
P803	4859242220	CONN WAFER	YFW800-02	
PD03A	4850703S29	CONNECTOR	YH025-03+YST025+USW=300	
PF01	4850707S02	CONNECTOR	YH025-07+YST025+ULW=400	
PF03	4859238620	CONN WAFER	YPW500-02	
PW000	4859903110	CORD POWER AS	KKP-419J-H03VVH2+H0U=2200	⚠
A000	4859903511	CORD POWER	CW4232 H03VVH2-F=2250	
Q401	PTD3SW1600	HEAT SINK ASS Y	DFMP3FU - + 7174300811	
00001	DFMP3FU -	DIODE	FMP3FU	
0000A	4857031600	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
0000C	TST2310DH1	TR	ST2310DHI	
0000D	7174301211	SCREW TAPPTITE	TT2 RND 3X12 MFZN	
Q402	T2SC4793	TR	2SC4793	
Q403	PTB2SW7603	HEAT SINK ASS'Y	T2SC4793 + 7174300811	
00001	T2SC4793	TR	2SC4793	
0000A	4857027603	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
0000C	4856815900	CLAMP WIRE	EGI T0.4+PVC COATING	
0000D	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
Q441	TKTC3209Y-	TR	KTC3209Y	
Q442	PTC2SW7603	HEAT SINK ASS'Y	T1RF830 - + 7174300811	
00001	T1RF830 -	FET	IRF830	
0000A	4857027603	HEAT SINK	AL EX	
0000B	7174300811	SCREW TAPPTITE	TT2 RND 3X8 MFZN	
R305	RN02B121JS	R METAL FILM	2W 120 OHM J SMALL	
R306	RW01Y228F-	R WIRE WOUND	1W 0.22 OHM F	
R401	RX05V301J-	R CEMENT	5W 300 OHM J VERTICAL	
R407	RX05V561J-	R CEMENT	5W 560 OHM J VERTICAL	
R424	RD-4Z682J-	R CARBON FILM	1/4 6.8K OHM J	
R505	RM02Y338J-	R METAL FLAT	2W 0.33 OHM J	
R801	DPC7R0M290	POSISTOR	2322 662 96709	
R813	RX10T229J-	R CEMENT	10W 2.2 OHM J TRIPOD	Ⓡ⚠
T401	50D25A3 -	TRANS DRIVE	TD-25A3	Ⓡ⚠
T402	50H0000258	FBT	BSC29-0125D	Ⓡ⚠
T402A	7178301212	SCREW TAPPTITE	TT2 WAS 3X12 MFZN BK	
T801	50M5345B8-	TRANS SMPS	TSM-5345B8	⚠
TU01	4859722630	TUNER VARACTOR	TECC2949PG35W	
Y801	5SC0101003	SW RELAY	DG12D1-0(M)-II 1C-1P	
ZZ200	PTMPJ0D764	PCB MAIN (RHU) AS	DTA-3220ZZF	
C320	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C321	CEXF1E102V	C ELECTRO	25V RSS 1000MF (13X20) TP	
C402	CEXF1H471V	C ELECTRO	50V RSS 470MF (13X20) TP	
C416	CCXB3D471K	C CERA	2KV B 470PF K (TAPPING)	
C420	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C442	CEXF2E100V	C ELECTRO	250V RSS 10MF (10X20) TP	
C610	CEXF1E471V	C ELECTRO	25V RSS 470MF (10X16) TP	
C611	CEXF1E471V	C ELECTRO	25V RSS 470MF (10X16) TP	
C813	CCXB3D471K	C CERA	2KV B 470PF K (TAPPING)	
C821	CCXB3D102K	C CERA	2KV B 1000PF K (TAPPING)	
C827	CEXF1E471V	C ELECTRO	25V RSS 470MF (10X16) TP	
C831	CEXF1E222V	C ELECTRO	25V RSS 2200MF (16X25) TP	
C832	CEXF1E222V	C ELECTRO	25V RSS 2200MF (16X25) TP	
C836	CEXF1C471V	C ELECTRO	16V RSS 470MF (8X12)TP	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C842	CEXF1C471V	C ELECTRO	16V RSS 470MF (8X12)TP	
C843	CEXF1H331V	C ELECTRO	50V RSS 330MF (10X20) TP	
C846	CEXF1E471V	C ELECTRO	25V RSS 470MF (10X16) TP	
ZZ200	PTMPJBD764	PCB MAIN M-10 AS	DTA-3220ZZF	
10	2TM18006BE	TAPE MASKING	6.2X500	
E101	4856310300	EYE LET	BSR T0.2 (R1.6)	
E102	4856310300	EYE LET	BSR T0.2 (R1.6)	
E103	4856310300	EYE LET	BSR T0.2 (R1.6)	
E104	4856310300	EYE LET	BSR T0.2 (R1.6)	
E105	4856310300	EYE LET	BSR T0.2 (R1.6)	
E106	4856310300	EYE LET	BSR T0.2 (R1.6)	
E107	4856310300	EYE LET	BSR T0.2 (R1.6)	
E108	4856310300	EYE LET	BSR T0.2 (R1.6)	
E109	4856310300	EYE LET	BSR T0.2 (R1.6)	
E110	4856310300	EYE LET	BSR T0.2 (R1.6)	
E111	4856310300	EYE LET	BSR T0.2 (R1.6)	
E112	4856310300	EYE LET	BSR T0.2 (R1.6)	
E113	4856310300	EYE LET	BSR T0.2 (R1.6)	
E114	4856310300	EYE LET	BSR T0.2 (R1.6)	
E115	4856310300	EYE LET	BSR T0.2 (R1.6)	
E116	4856310300	EYE LET	BSR T0.2 (R1.6)	
E117	4856310300	EYE LET	BSR T0.2 (R1.6)	
E118	4856310300	EYE LET	BSR T0.2 (R1.6)	
E119	4856310300	EYE LET	BSR T0.2 (R1.6)	
E120	4856310300	EYE LET	BSR T0.2 (R1.6)	
E121	4856310300	EYE LET	BSR T0.2 (R1.6)	
E122	4856310300	EYE LET	BSR T0.2 (R1.6)	
E123	4856310300	EYE LET	BSR T0.2 (R1.6)	
E124	4856310300	EYE LET	BSR T0.2 (R1.6)	
E125	4856310300	EYE LET	BSR T0.2 (R1.6)	
E126	4856310300	EYE LET	BSR T0.2 (R1.6)	
E127	4856310300	EYE LET	BSR T0.2 (R1.6)	
E128	4856310300	EYE LET	BSR T0.2 (R1.6)	
E201	4856310600	EYE LET	BSR T0.2 (R2.3)	
E202	4856310600	EYE LET	BSR T0.2 (R2.3)	
E206	4856310600	EYE LET	BSR T0.2 (R2.3)	
E208	4856310600	EYE LET	BSR T0.2 (R2.3)	
E210	4856310600	EYE LET	BSR T0.2 (R2.3)	
E211	4856310600	EYE LET	BSR T0.2 (R2.3)	
E212	4856310600	EYE LET	BSR T0.2 (R2.3)	
E213	4856310600	EYE LET	BSR T0.2 (R2.3)	
E214	4856310600	EYE LET	BSR T0.2 (R2.3)	
E215	4856310600	EYE LET	BSR T0.2 (R2.3)	
E216	4856310600	EYE LET	BSR T0.2 (R2.3)	
E217	4856310600	EYE LET	BSR T0.2 (R2.3)	
E218	4856310600	EYE LET	BSR T0.2 (R2.3)	
E219	4856310600	EYE LET	BSR T0.2 (R2.3)	
E220	4856310600	EYE LET	BSR T0.2 (R2.3)	
E221	4856310600	EYE LET	BSR T0.2 (R2.3)	
E222	4856310600	EYE LET	BSR T0.2 (R2.3)	
E223	4856310600	EYE LET	BSR T0.2 (R2.3)	
E224	4856310600	EYE LET	BSR T0.2 (R2.3)	
E225	4856310600	EYE LET	BSR T0.2 (R2.3)	

Part List

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
E226	4856310600	EYE LET	BSR T0.2 (R2.3)	
E227	4856310600	EYE LET	BSR T0.2 (R2.3)	
E228	4856310600	EYE LET	BSR T0.2 (R2.3)	
E229	4856310600	EYE LET	BSR T0.2 (R2.3)	
E230	4856310600	EYE LET	BSR T0.2 (R2.3)	
E231	4856310600	EYE LET	BSR T0.2 (R2.3)	
E232	4856310600	EYE LET	BSR T0.2 (R2.3)	
E233	4856310600	EYE LET	BSR T0.2 (R2.3)	
E234	4856310600	EYE LET	BSR T0.2 (R2.3)	
P101	485923162S	CONN WAFER	YW025-03 (STICK)	
P102	485923162S	CONN WAFER	YW025-03 (STICK)	
P105	485923162S	CONN WAFER	YW025-03 (STICK)	
P601	485923172S	CONN WAFER	YW025-04 (STICK)	
P603	485923172S	CONN WAFER	YW025-04 (STICK)	
P701	485923512S	CONN WAFER	YW025-08 (STICK)	
PA01	485923522S	CONN WAFER	YW025-09 (STICK)	
PD08	485923172S	CONN WAFER	YW025-04 (STICK)	
PT02	485923162S	CONN WAFER	YW025-03 (STICK)	
R320	RF01Z158K-	R FUSIBLE	1W 0.15 OHM K (TAPPING)	
R322	RF01Z158K-	R FUSIBLE	1W 0.15 OHM K (TAPPING)	
R408	RF01Z100J-	R FUSIBLE	1W 10 OHM J (TAPPING)	
R809	RS02Z158J-	R M-OXIDE FILM	2W 0.15 OHM J	
R849	RF02Z228J-	R FUSIBLE	2W 0.22 OHM J (TAPPING)	
R850	RF02Z228J-	R FUSIBLE	2W 0.22 OHM J (TAPPING)	
ZZ200	PTMPJRD764	PCB MAIN RADIAL AS	DTA-3220ZZF	
C101	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C102	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C103	CEXF1E221V	C ELECTRO	25V RSS 220MF (8X11.5) TP	
C107	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C301	CMXM2A153J	C MYLAR	100V 0.015MF J (TP)	
C302	CCXF1H333Z	C CERA	50V F 0.033MF Z (TAPPING)	
C303	CMXM2A683J	C MYLAR	100V 0.068MF J (TP)	
C304	CMXL1J333J	C MYLAR	63V MEU 0.033MF J	
C305	CEXF1H101V	C ELECTRO	50V RSS 100MF (8X11.5) TP	
C334	CMXM2A223J	C MYLAR	100V 0.022MF J TP	
C401	CEXF1H101V	C ELECTRO	50V RSS 100MF (8X11.5) TP	
C403	CMXM2A273J	C MYLAR	100V 0.027MF J (TP)	
C404	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
C409	CEXF2C109V	C ELECTRO	160V RSS 1MF (6.3X11) TP	
C412	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C413	CXSL2H470J	C CERA	500V SL 47PF J (TAPPING)	
C414	CCXB2H101K	C CERA	500V B 100PF K (TAPPING)	
C415	CCXF1H223Z	C CERA	50V F 0.022MF Z (TAPPING)	
C417	CMXM2A392J	C MYLAR	100V 3900PF J (TP)	
C419	CMXM2A104K	C MYLAR	100V 0.1MF K (TP)	
C445	CCXB3A102K	C CERA	1KV B 1000PF K (TAPPING)	
C501	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C502	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C503	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C603	CCXF1H333Z	C CERA	50V F 0.033MF Z (TAPPING)	
C607	CMXL1J105J	C MYLAR	63V MEU 1MF J	
C608	CMXL1J105J	C MYLAR	63V MEU 1MF J	
C609	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C620	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
C622	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
C624	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C626	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11) TP	
C627	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C704	CMXL1J105J	C MYLAR	63V MEU 1MF J	
C706	CCXB1H222K	C CERA	50V B 2200PF K (TAPPING)	
C707	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C708	CMXL1J474J	C MYLAR	63V MEU 0.47MF J	
C711	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11) TP	
C714	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
C716	CEXF1C470V	C ELECTRO	16V RSS 47MF (5X11) TP	
C719	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C720	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C721	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C723	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C805	CCXF3A472Z	C CERA	1KV F 4700PF Z (T)	
C806	CCXF3A472Z	C CERA	1KV F 4700PF Z (T)	
C812	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11) TP	
C814	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C815	CCXB1H681K	C CERA	50V B 680PF K (TAPPING)	
C816	CCXB1H152K	C CERA	50V B 1500PF K (TAPPING)	
C822	CEXF2A100V	C ELECTRO	100V RSS 10MF (6.3X11) TP	
C823	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C824	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11) TP	
C825	CCXB3A471K	C CERA	1KV B 470PF K (T)	
C826	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C830	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C837	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
C840	CXSL2H470J	C CERA	500V SL 47PF J (TAPPING)	
C844	CCXB2H152K	C CERA	500V B 1500PF K (TAPPING)	
C845	CCXB2H152K	C CERA	500V B 1500PF K (TAPPING)	
CA01	CEXF1E100V	C ELECTRO	25V RSS 10MF (5X11) TP	
CA02	CEXF1E100V	C ELECTRO	25V RSS 10MF (5X11) TP	
F801A	4857415001	CLIP FUSE	PFC5000-0702	
F801B	4857415001	CLIP FUSE	PFC5000-0702	
I704	1K1A7042AP	IC RESET	KIA7042AP	
L802	58CX430599	COIL CHOKE	AZ-9004Y 940K TP	
Q101	TKTC3198Y-	TR	KTC3198Y	
Q102	TKTC3198Y-	TR	KTC3198Y	
Q103	TKTC3198Y-	TR	KTC3198Y	
Q404	TKTC3198Y-	TR	KTC3198Y	
Q405	TKTC3198Y-	TR	KTC3198Y	
Q406	TKTA1266Y-	TR	KTA1266Y (TP)	
Q501	TKTC3198Y-	TR	KTC3198Y	
Q502	TKSA1013Y-	TR	KSA1013Y (TP)	
Q503	TKTC3198Y-	TR	KTC3198Y	
Q601	TKTC3198Y-	TR	KTC3198Y	
Q602	TKTC3198Y-	TR	KTC3198Y	
Q620	TKTC3198Y-	TR	KTC3198Y	
Q621	TKTA1266Y-	TR	KTA1266Y (TP)	
Q622	TKTC3198Y-	TR	KTC3198Y	
Q623	TKTA1266Y-	TR	KTA1266Y (TP)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
Q701	TKTC3198Y-	TR	KTC3198Y	
Q702	TKTC3198Y-	TR	KTC3198Y	
Q703	TKTA1266Y-	TR	KTA1266Y (TP)	
Q801	TKTC3198Y-	TR	KTC3198Y	
Q802	TKTC3198Y-	TR	KTC3198Y	
Q803	TKTC3198Y-	TR	KTC3198Y	
Q804	TKTC3198Y-	TR	KTC3198Y	
Q805	TKTC3198Y-	TR	KTC3198Y	
R406	RN02B473JS	R METAL FILM	2W 47K OHM J SMALL	
R442	RN01B222JS	R METAL FILM	1W 2.2K OHM J SMALL	
R444	RN02B153JS	R METAL FILM	2W 15K OHM J SMALL	
R447	RN02B183JS	R METAL FILM	2W 18K OHM J SMALL	
R450	RN01B242JS	R METAL FILM	1W 2.4K OHM J SMALL	
R451	RN02B752JS	R METAL FILM	2W 7.5K OHM J SMALL	
R452	RN01B562JS	R METAL FILM	1W 5.6K OHM J SMALL	
R802	RN02B683JS	R METAL FILM	2W 68K OHM J SMALL	
R824	RN02B102JS	R METAL FILM	2W 1K OHM J SMALL	
R825	RN02B100JS	R METAL FILM	2W 10 OHM J SMALL	
R833	RN02B473JS	R METAL FILM	2W 47K OHM J SMALL	
R834	RN02B472JS	R METAL FILM	2W 4.7K OHM J SMALL	
R835	RN02B472JS	R METAL FILM	2W 4.7K OHM J SMALL	
R851	RN02B109JS	R METAL FILM	2W 1 OHM J SMALL	
X701	5XEX4R000C	CRYSTAL QUARTZ	HC-49/U 4.000MHZ 20PPM TP	
Z102	5PXXT5R5MB	FILTER CERA	XT 5.5MB-TP	
ZA01	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA02	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA03	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA04	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA20	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA21	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA22	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZA23	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZF01	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZF02	5PXF1B471M	FILTER EMI	CFI 06 B 1H 470PF	
ZZ200	PTMPJAD764	PCB MAIN AXIAL AS	DTA-3220ZZF	
10	2TM14006LB	TAPE MASKING	3M #232 6.0X2000M	
20	2TM10006LB	TAPE MASKING	3M #232-MAP-C 6.2X2000M	
A001	4859807393	PCB MAIN	330X246 FR-1 1.6T	
C104	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C105	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C106	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C601	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C602	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C604	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C605	CBZR1C472M	C CERA	16V Y5R 4700PF M (AXIAL)	
C606	CBZR1C472M	C CERA	16V Y5R 4700PF M (AXIAL)	
C621	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C623	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C628	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C701	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C702	CCZB1H820K	C CERA	50V B 82PF K (AXIAL)	
C703	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C709	CCZB1H820K	C CERA	50V B 82PF K (AXIAL)	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
C710	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C712	CBZR1C222M	C CERA	16V Y5R 2200PF M (AXIAL)	
C713	CBZR1C472M	C CERA	16V Y5R 4700PF M (AXIAL)	
C715	CCZF1H103Z	C CERA	50V F 0.01MF Z	
C717	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C718	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C722	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C750	CCZB1H681K	C CERA	50V B 680PF K (AXIAL)	
C833	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C834	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C835	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C838	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C841	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z	
CF01	CCZB1H331K	C CERA	50V B 330PF K (AXIAL)	
CF02	CCZB1H331K	C CERA	50V B 330PF K (AXIAL)	
CF04	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
CF05	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
D101	D1N4148 -	DIODE	1N4148 (TAPPING)	
D301	D1N4937G	DIODE	1N4937G (TAPPING)	
D302	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
D303	D1N4937G	DIODE	1N4937G (TAPPING)	
D304	D1N4937G	DIODE	1N4937G (TAPPING)	
D403	D1N4937G	DIODE	1N4937G (TAPPING)	
D405	D1N4937G	DIODE	1N4937G (TAPPING)	
D406	D1N4148 -	DIODE	1N4148 (TAPPING)	
D407	D1N4148 -	DIODE	1N4148 (TAPPING)	
D408	D1N4148 -	DIODE	1N4148 (TAPPING)	
D409	D1N4148 -	DIODE	1N4148 (TAPPING)	
D420	D1N4937G	DIODE	1N4937G (TAPPING)	
D441	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
D442	DTZX12C -	DIODE ZENER	TZX12C	
D504	D1N4148 -	DIODE	1N4148 (TAPPING)	
D701	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
D702	D1N4148 -	DIODE	1N4148 (TAPPING)	
D703	D1N4148 -	DIODE	1N4148 (TAPPING)	
D704	D1N4148 -	DIODE	1N4148 (TAPPING)	
D801	DLT2A05G	DIODE	LT2A05G (TP)	
D802	DLT2A05G	DIODE	LT2A05G (TP)	
D803	DLT2A05G	DIODE	LT2A05G (TP)	
D804	DLT2A05G	DIODE	LT2A05G (TP)	
D808	DEU1Z -	DIODE	EU1Z (HIGH SPEED)	
D810	DEU1Z -	DIODE	EU1Z (HIGH SPEED)	
D811	DEU1Z -	DIODE	EU1Z (HIGH SPEED)	
D812	DEU1Z -	DIODE	EU1Z (HIGH SPEED)	
D822	D1N4937G	DIODE	1N4937G (TAPPING)	
D823	DRGP15J -	DIODE	RGP15J DO-204AC 600V 1.5A	
D825	DRGP15J -	DIODE	RGP15J DO-204AC 600V 1.5A	
D826	D1N4937G	DIODE	1N4937G (TAPPING)	
D829	D1N4937G	DIODE	1N4937G (TAPPING)	
D830	D1N4937G	DIODE	1N4937G (TAPPING)	
D831	DUZ7R5BM	DIODE ZENER	UZ-7.5BM	
D832	D1N4148 -	DIODE	1N4148 (TAPPING)	
D834	DUZ33B	DIODE ZENER	UZ-33B	

Part List

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
DA01	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA02	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA03	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA04	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA05	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA06	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA07	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA08	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA09	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA10	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA11	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA20	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA21	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA22	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA23	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA24	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA25	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA26	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA27	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA28	DUZ5R1B -	DIODE ZENER	UZ-5.1B	
DA50	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DA51	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DF02	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DF03	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DF04	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DF05	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
DF11	DUZ5R6BM	DIODE ZENER	UZ-5.6BM	
J101	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J103	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J104	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J105	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J106	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J107	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J108	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J109	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J110	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J111	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J112	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J113	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J118	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J120	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J121	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J122	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J301	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J302	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J303	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J304	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J401	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J402	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J403	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J404	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J406	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J407	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
J408	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J410	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J412	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J413	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J414	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J415	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J417	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J418	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J419	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J420	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J421	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J422	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J423	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J425	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J426	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J427	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J428	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J429	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J431	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J450	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J451	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J452	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J480	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J484	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J501	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J502	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J504	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J506	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J507	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J508	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J509	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J510	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J511	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J513	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J514	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J515	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J516	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J517	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J518	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J519	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J520	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J521	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J522	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J523	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J524	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J525	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J526	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J527	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J528	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J530	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J531	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J532	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J533	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
J534	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J535	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J537	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J539	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J540	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J541	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J542	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J543	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J544	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J545	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J546	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J547	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J548	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J549	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J550	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J551	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J552	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J553	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J555	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J601	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J602	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J603	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J604	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J605	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J606	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J607	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J608	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J610	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J611	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J613	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J614	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J617	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J627	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J628	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J631	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J632	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J634	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J703	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J704	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J705	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J709	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J710	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J711	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J712	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J713	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J715	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J717	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J718	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J719	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J720	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J721	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J722	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J723	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
J724	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J725	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J726	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J727	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J728	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J729	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J731	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J732	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J733	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J734	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J735	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J736	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J737	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J738	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J741	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J750	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J801	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J802	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J804	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J805	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J806	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J807	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J808	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J809	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J810	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J811	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J814	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J815	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J816	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J819	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J821	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J828	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J830	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J831	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J833	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J834	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J835	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J836	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J903	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J920	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
J921	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
L101	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L102	5CPZ120K02	COIL PEAKING	12UH K (AXIAL 3.5MM)	
L301	5MC0000100	COIL BEAD	HC-3550	
L302	5MC0000100	COIL BEAD	HC-3550	
L402	5MC0000100	COIL BEAD	HC-3550	
L404	5MC0000100	COIL BEAD	HC-3550	
L405	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
L609	5MC0000100	COIL BEAD	HC-3550	
L610	5MC0000100	COIL BEAD	HC-3550	
L620	5CPZ569K02	COIL PEAKING	5.6UH K (AXIAL 3.5MM)	
L621	5CPZ569K02	COIL PEAKING	5.6UH K (AXIAL 3.5MM)	
L801	5MC0000100	COIL BEAD	HC-3550	

Part List

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
LA10	58C0000116	COIL BEAD	HC-3550R	
LF01	5MC0000100	COIL BEAD	HC-3550	
R101	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R102	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R104	RD-AZ123J-	R CARBON FILM	1/6 12K OHM J	
R105	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R106	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R107	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
R108	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R109	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R110	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R111	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R301	RD-AZ133J-	R CARBON FILM	1/6 13K OHM J	
R302	RD-2Z159J-	R CARBON FILM	1/2 1.5 OHM J	
R303	RN-4Z2001F	R METAL FILM	1/4 2.0K OHM F	
R304	RN-AZ1801F	R METAL FILM	1/6 1.8K OHM F	
R307	RN-AZ1002F	R METAL FILM	1/6 10K OHM F	
R308	RN-AZ1002F	R METAL FILM	1/6 10K OHM F	
R310	RN-AZ6801F	R METAL FILM	1/6 6.8K OHM F	
R311	RN-AZ6801F	R METAL FILM	1/6 6.8K OHM F	
R312	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R313	RN-AZ9101F	R METAL FILM	1/6 9.1K OHM F	
R314	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R402	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R403	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R404	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R405	RD-AZ220J-	R CARBON FILM	1/6 22 OHM J	
R409	RD-2Z479J-	R CARBON FILM	1/2 4.7 OHM J	
R410	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R411	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R412	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R413	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R414	RD-AZ751J-	R CARBON FILM	1/6 750 OHM J	
R415	RN-4Z3003F	R METAL FILM	1/4 300K OHM F	
R416	RN-AZ1003F	R METAL FILM	1/6 100K OHM F	
R417	RN-AZ1202F	R METAL FILM	1/6 12K OHM F	
R418	RN-AZ6801F	R METAL FILM	1/6 6.8K OHM F	
R419	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R420	RF-4Z228K-	R FUSIBLE	1/4 0.22 OHM K	
R422	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R423	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R425	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R426	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R427	RD-AZ154J-	R CARBON FILM	1/6 150K OHM J	
R441	RD-4Z104J-	R CARBON FILM	1/4 100K OHM J	
R443	RD-4Z474J-	R CARBON FILM	1/4 470K OHM J	
R445	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	
R446	RD-4Z101J-	R CARBON FILM	1/4 100 OHM J	
R500	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R501	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R502	RD-AZ823J-	R CARBON FILM	1/6 82K OHM J	
R503	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R504	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R506	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R507	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R508	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R601	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R602	RD-4Z479J-	R CARBON FILM	1/4 4.7 OHM J	
R603	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R604	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R605	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R606	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R607	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R608	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R609	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R610	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R611	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R620	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R621	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R622	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J	
R623	RD-AZ512J-	R CARBON FILM	1/6 5.1K OHM J	
R624	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J	
R625	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R626	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R627	RD-AZ512J-	R CARBON FILM	1/6 5.1K OHM J	
R701	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R702	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
R703	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R704	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R705	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R706	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R707	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R708	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R709	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R710	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R711	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R712	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R713	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R714	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R715	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R716	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R717	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R718	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R719	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R720	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R721	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R722	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R723	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R724	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R725	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R726	RD-AZ161J-	R CARBON FILM	1/6 160 OHM J	
R727	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
R728	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R729	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R735	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R803	RC-2Z824KP	R CARBON COMP	1/2 820K OHM K	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
R807	RD-2Z330J-	R CARBON FILM	1/2 33 OHM J	
R808	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R810	RD-4Z472J-	R CARBON FILM	1/4 4.7K OHM J	
R811	RD-2Z272J-	R CARBON FILM	1/2 2.7K OHM J	
R812	RC-2Z565KP	R CARBON COMP	1/2 5.6M OHM K	
R814	RD-4Z220J-	R CARBON FILM	1/4 22 OHM J	
R822	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
R823	RD-4Z242J-	R CARBON FILM	1/4 2.4K OHM J	
R826	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R827	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R828	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
R829	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R830	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R831	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R832	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RA01	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RA03	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA04	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA07	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
RA08	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA09	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA10	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA11	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA12	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA13	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
RA14	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RA20	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA21	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA22	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA23	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RA24	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
RA25	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RF01	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RF02	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
ZZ400	PTMAMSD664	PCB MAIN MODULE MANUAL AS	DTK-28A7ZZ	
ID03	1LD1117V33	IC REGULATOR	LD117AV33 3.3V 2% TO-220	
ID04	1LD1117V18	IC REGULATOR	LD117AV18 1.8V 2% TO-220	
PD01	4859279520	CONN WAFER	TAC-L15P-A3 (ANGLE)	
PD02	4859279820	CONN WAFER	TAC-L18P-A3 (ANGLE)	
PD03	4859231620	CONN WAFER	YW025-03	
PD04	4853946000	BRKT JUMPER A	SECC T1.0 (VCR-63DB)	
PD05	4853946000	BRKT JUMPER A	SECC T1.0 (VCR-63DB)	
PD06	4859235520	CONN WAFER	YW025-12	
PD08A	4850704S45	CONNECTOR	YH025-04+YST025+USW=150	
SD01	4857250300	SHIELD CASE	SPTH-C T=0.3	
SD01A	4857250400	SHIELD PLATE	SPTH-C T=0.3	
XD01	5XE20R250E	CRYSTAL QUARTZ	HC-49/U 20.2500MHZ 30PPM	
ZZ200	PTMAJ2D664	PCB MAIN MODULE CHIP B AS	DTK-28A7ZZ	
CCD01	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD02	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD03	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD04	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD05	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
CCD06	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD07	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD08	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD10	HCBK473KBA	C CHIP CERA	50V X7R 0.047MF K 1608	
CCD11	HCBK473KBA	C CHIP CERA	50V X7R 0.047MF K 1608	
CCD12	HCBK473KBA	C CHIP CERA	50V X7R 0.047MF K 1608	
CCD13	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD14	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD15	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD16	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD18	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD19	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
CCD20	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD21	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD22	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
CCD23	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
CCD24	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
CCD25	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD26	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD27	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD28	HCQK221JBA	C CHIP CERA	50V CH 220PF J 1608	
CCD29	HCQK221JBA	C CHIP CERA	50V CH 220PF J 1608	
CCD30	HCQK221JBA	C CHIP CERA	50V CH 220PF J 1608	
CCD31	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
CCD32	HCQK240JBA	C CHIP CERA	50V CH 24PF J 1608	
CCD33	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD34	HCBK102KBA	C CHIP CERA	50V X7R 1000PF K 1608	
CCD35	HCBK103KBA	C CHIP CERA	50V X7R 0.01MF K 1608	
CCD37	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD38	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
CCD39	HCBK104KBA	C CHIP CERA	50V X7R 0.1MF K 1608	
ID01	1VSP9412AQ	IC CHIP VIDEO	VSP9412A	
ID02	1DDP3315CQ	IC CHIP	DDP3315CQ	
QCD01	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD02	T2SA812T2B	TR CHIP	2SA812-T2B	
QCD03	T2SA812T2B	TR CHIP	2SA812-T2B	
QCD04	T2SA812T2B	TR CHIP	2SA812-T2B	
QCD05	T2SA812T2B	TR CHIP	2SA812-T2B	
QCD06	TKTC3875GB	TR CHIP	KTC3875-GR	
QCD07	TKTC3875GB	TR CHIP	KTC3875-GR	
RCD01	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
RCD02	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
RCD03	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD04	HRFT151JBA	R CHIP	1/10 150 OHM J 1608	
RCD05	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
RCD06	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
RCD07	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
RCD08	HRFT750JBA	R CHIP	1/10 75 OHM J 1608	
RCD10	HRFT332JBA	R CHIP	1/10 3.3K OHM J 1608	
RCD12	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
RCD14	HRFT223JBA	R CHIP	1/10 22K OHM J 1608	
RCD15	HRFT222JBA	R CHIP	1/10 2.2K OHM J 1608	
RCD16	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	

Part List

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
RCD17	HRFT102JBA	R CHIP	1/10 1K OHM J 1608	
RCD18	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
RCD19	HRFT151JBA	R CHIP	1/10 150 OHM J 1608	
RCD20	HRFT151JBA	R CHIP	1/10 150 OHM J 1608	
RCD22	HRFT271JBA	R CHIP	1/10 270 OHM J 1608	
RCD23	HRFT330JBA	R CHIP	1/10 33 OHM J 1608	
RCD24	HRFT201JBA	R CHIP	1/10 200 OHM J 1608	
RCD25	HRFT330JBA	R CHIP	1/10 33 OHM J 1608	
RCD26	HRFT201JBA	R CHIP	1/10 200 OHM J 1608	
RCD27	HRFT330JBA	R CHIP	1/10 33 OHM J 1608	
RCD28	HRFT201JBA	R CHIP	1/10 200 OHM J 1608	
RCD29	HRFT223JBA	R CHIP	1/10 22K OHM J 1608	
RCD31	HRFT330JBA	R CHIP	1/10 33 OHM J 1608	
RCD32	HRFT220JBA	R CHIP	1/10W 22 OHM J 1608	
RCD33	HRFT222JBA	R CHIP	1/10 2.2K OHM J 1608	
RCD36	HRFT221JBA	R CHIP	1/10 220 OHM J 1608	
RCD37	HRFT103JBA	R CHIP	1/10 10K OHM J 1608	
RCD39	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD40	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD41	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD42	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD43	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD44	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD45	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD46	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
RCD47	HRFT101JBA	R CHIP	1/10 100 OHM J 1608	
ZZ200	PTMAJRD664	PCB MAIN MODULE RADIAL AS	DTK-28A7ZZ	
CD01	CEXF1C101V	C ELECTRO	16V RSS 100MF (6.3X11) TP	
CD02	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD03	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD04	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD05	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD06	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD07	CMXM2A224J	C MYLAR	100V 0.22MF J	
CD08	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD09	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
CD10	CXCH1H220J	C CERA	50V CH 22PF J (TAPPING)	
CD12	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD13	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
CD14	CXCH1H270J	C CERA	50V CH 27PF J (TAPPING)	
CD15	CXCH1H270J	C CERA	50V CH 27PF J (TAPPING)	
CD16	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
CD17	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
CD18	CEXF1H339V	C ELECTRO	50V RSS 3.3MF (5X11) TP	
CD19	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
CD21	CCXF1H103Z	C CERA	50V F 0.01MF Z (TAPPING)	
CD23	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
CD24	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
QD01	TH2N7000	FET	H2N7000	
QD02	TH2N7000	FET	H2N7000	
RD17	RN02B689JS	R METAL FILM	2W 6.8 OHM J SMALL	
XD02	5XEX5R000E	CRYSTAL QUARTZ	HC-49/U 5.000MHZ 30PPM TP	
ZZ200	PTMAJAD664	PCB MAIN MODULE AXIAL AS	DTK-28A7ZZ	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
A001	4859808360	PCB MODULE	246X246 D1B	
CD20	CCZF1H103Z	C CERA	50V F 0.01MF Z	
CD25	CCZF1H103Z	C CERA	50V F 0.01MF Z	
DD01	D1N4148 -	DIODE	1N4148 (TAPPING)	
DD02	D1N4148 -	DIODE	1N4148 (TAPPING)	
DD03	D1N4148 -	DIODE	1N4148 (TAPPING)	
JD01	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD02	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD03	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD04	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD05	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD06	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD07	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD08	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD09	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD10	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD11	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD12	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD13	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD15	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD16	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD17	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD18	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD19	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD20	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD21	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD22	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD23	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD24	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD25	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD26	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD27	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD28	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD29	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD30	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD31	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD32	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD33	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD34	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD35	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD36	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD37	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD38	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD39	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD40	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD41	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD42	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD43	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD44	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD45	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD46	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD47	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD48	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	

LOC	PART CODE	PART NAME	DESCRIPTION	REMARK
JD49	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD50	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD51	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD52	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD53	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD54	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD55	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD56	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD57	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD58	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD59	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD60	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD61	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
JD62	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN COATING	
LD01	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
LD02	5CPZ100K02	COIL PEAKING	10UH K (AXIAL 3.5MM)	
LD03	5CPZ479K02	COIL PEAKING	4.7UH K (AXIAL 3.5MM)	
LD04	5CPZ100K02	COIL PEAKING	10UH K (AXIAL 3.5MM)	
LD05	5CPZ100K02	COIL PEAKING	10UH K (AXIAL 3.5MM)	
LD06	5CPZ100K02	COIL PEAKING	10UH K (AXIAL 3.5MM)	
RD02	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RD03	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RD04	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RD05	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RD06	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RD07	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RD08	RD-AZ752J-	R CARBON FILM	1/6 7.5K OHM J	
RD10	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
RD11	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
RD12	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RD13	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
RD15	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
RD16	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
RD18	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
RD19	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
RD20	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
RD21	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
RD22	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	

APPENDIX
IC DESCRIPTION

5-1. ST92195
(1) General Description
1.1 INTRODUCTION
The ST92195 microcnontoller is developed and manufactured by STMicroelecrtonics using a proprietary n-well HCMOS process. Its performance derives from the use of a flexible 256-register programming model for ultra-fast context switching and real-time event response. The intelligent onchip peripherals offload the ST9 core from I/O and data management processing tasks allowing critical application tasks to get the maximum use off core resources. The ST92195 MCU supports low power consumption and low voltage operation for power-efficient and low-cost embedded systems.

1.1.1 ST9+Core
The advanced Core consists of the Central Processing Unit (CPU), the Register File and the Interrupt controller. The general-purpose registers can be used as accumulator, Index register, or address pointers. Adjacent register pairs make up 16-bit registers for addressing or 16-bit processing. Although the ST9 has an 8-bit ALU, the chip handles 16-bit operations, including arithmetic, loads/stores, and memory/register and memory/memory exchanges. Two basic memory spaces are available : Program Memory and the Register File, Which includes the control and status registers of the on-chip peripherals.

1.1.2 Power Saving Modes
To optimize performance versus power consumption, a range of operating modes can be dynamically selected.

Run Mode. This is the full speed execution mode with CPU and peripherals running at the maximum clock speed delivered by the phase Locked Loop(PLL) of the Clock Control Unit(CCU).

Wait For Interrupt Mode. The Wait For Interrupt(WFI) instruction suspends program execution until an interrupt request is acknowledged. During WFI, the CPU clock is halted while the peripheral and interrupt controller keep running at a frequency programmable via the CCU. In this mode, the power consumption of the device can be reduced by more than 95%(LP WFI).

Wait For Interrupt Mode. The Wait For Interrupt(WFI) instruction, and if the Watchdog is not enable, the CPU and its peripherals stop operation and the I/O ports enter high impedance mode. A reset is necessary to exit from Halt mode.

1.1.3 I/O Ports
Up to 28 I/O lines are dedicated to digital Input/Output. These lines are grouped into up to five I/O Ports and can be configureed on a bit basis under software control to provide timing, status signals, timer and output, analog inputs, external interrupts and serial or parallel I/O.

1.1.4 TV Peripherals
A set of on-chip peripherals form a complete system for TV set and VCR applications:
- Voltage Synthesis
- VPS/WSS Slicer
- Teletext Slicer
- Teletext Display RAM
- OSD

1.1.5 On Screen Display
The human interface is provided by the On Screen Display module, this can produce up to 26 lines of up to 80 characters from a ROM defined 512 character set. The character resolution is 10x10 dot. Four character sizes are supported. Serial attributes allow the user to select foreground and background. Parallel attributes can be used to select additional foreground and background colors and underline on a character by character basis.

1.1.6 Teletext and Display RAM
The internal 8k Teletext and Display storage RAM can be used to store Teletext pages as well as Display parameters.

1.1.7 Teletext, VPS and WSS Data Slicers
The three on-board data slicers using a single external crystal are used to extract the Teletext, VPS and WSS information from the video signal. Hardware Hamming decoding is provided.

1.1.8 Voltage Synthesis Tuning Control
14-bit Voltage Synthesis using the PWM (Pulse Width Modulation)/BRM (Bit Rate Modulation) technique can be used to genetate tuning voltages for TV set applications. The tuning voltage is output on one of two separate output pins.

1.1.9 PWM Output

Control of TV settings is able to be made with up to eight 8-bit PWM outputs, with a frequency maximum of 23,437Hz at 8-bit resolution(INTCLK=12 MHz). Low resolutions with higher frequency operation can be programmed.

1.1.10 Serial Peripheral Interface (SPI)

The SPI bus is used to communicate with external devices via the SPI, or I^2C bus communication standards. The SPI uses one or two lines for serial data and a synchronous clock signal.

1.1.11 Standard Timer (STIM)

The Standard Timer includes a programmable 16-bit down counter and an associated 8-bit prescaler with Single and Continuous counting modes.

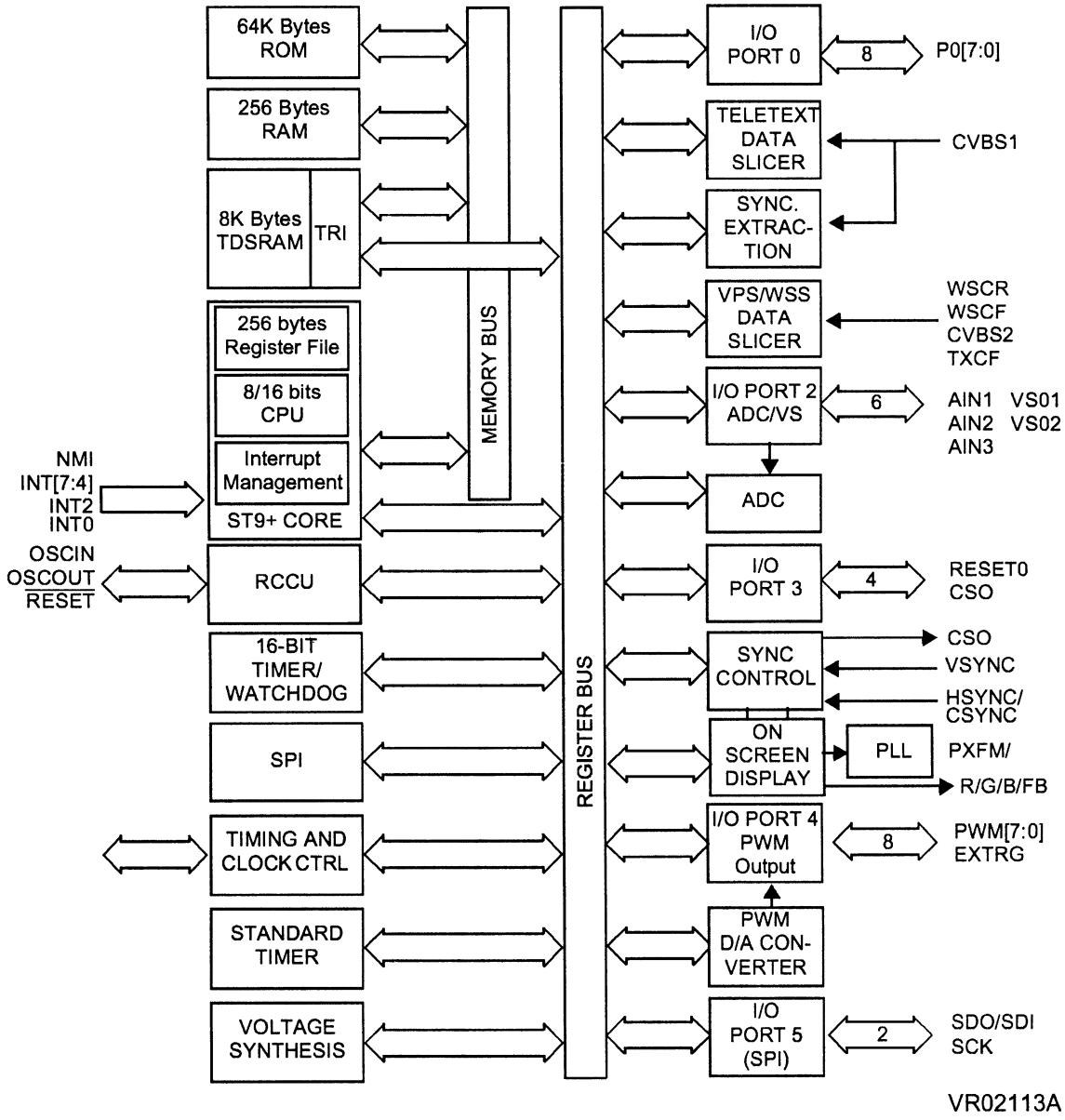
1.1.12 Analog/Digital Converter (ADC)

In addition there is a 3 channel Analog to Digital Converter with integral sample and hold, fast 5.7us conversion timer and 6-bit guaranteed resolution.

(2) Feature

- Register File based 8/16 bit Core Architecture with
- RUN, WFI, SLOW and HALT modes
- $0^{\circ}C$ to 70° Coperating temperature range
- Up to 24 MHz Operation @5V ±10%
- Minimum instruction cycle time : 375ns at 16MHz internal clock
- 64K Bytes ROM
- 256 Bytes RAM of Register file(accumulator or index registers)
- 256 Bytes of on-chip static RAM
- 8K Bytes of TDSRAM(Teletext and Display RAM)
- 56-lead Shrink DIP package
- 28 fully programmable I/O pins
- Serial Peripheral Interface
- Flexible Clock controller for OSD, Data Slicer and Core clocks running from one single low frequency external crystal.
- Enhanced Display Controller with 26 rows of 40/80 characters
  - Serial and Parallel attributes
  - 10x10 dot Matrix, 512 ROM characters, definable by user
  - 4/3 and 16/9 supported
  - Rounding, fringe, double width, double height, scrolling, cursor, full background colour, semitransparent mode and reduced intensity colour supported
- Teletext unit, including Data slicer, Acquisition Unit and up to 8K Bytes RAM for Data Storage
- VPS and Wode Screen Signalling slicer
- Integrated Sync Extractor and Sync Controller
- 14-bit Voltage Synthesis for tuning reference voltage
- Up to 6 external interrupts plus 1 non-maskable interrupt
- 8x8-bit programmable PWM outputs with 5V open-drain or push-pull capability
- 16-bit Watchdog timer with 8-bit prescale
- 16-bit standard timer with 8-bit prescaler usable as a Watchdog timer
- 3-channel Analog-to-Digital converter ; 6-bit guaranteed
- Rich instruction set and 14-Addressing modes
- Versatile Development Tools, including Assembler, Linker, C-compiler, Archiver, Source Level Debugger and Hardware Emulators with Real-Time Operating System available from third parties
- Piggyback board available for prototyping

(3) Block Diagram



(4) PIN DESCRIPTION

$\overline{\text{RESET}}$ *Reset* (input, active low). The ST9+ is initialised by the Reset signal. With the deactivation of RESET, program execution begins from the Program memory location pointed to by the vector contained in program memory locations 00h and 01h.

R/G/B *Red/Green/Blue.* Video color analog DAC outputs

FB *Fast Blanking.* Video analog DAC output.

VOD Main power supply voltage(5V 10%, digital)

WSCF, WSCR Analog pins for the VPS/WPP slicer line PLL.

MCFM Analog pin for the display pixel frequency multiplier.

OSCIN, OSCOUT *Oscillator* (input and output).
These pins connect a parallel-resonant crystal(24MHz maximum), or an external source to the on-chip clock oscillator and buffer. OSCIN is the input of the oscilltor inverter and internal clock generator; OSCOUT is the output of the oscillator inverter.

VSYNC *Vertical Sync.* Vertical video synchronisation input to OSD. Positive or negative polarity.

HYNC/CSYNC *Horizontal/Composite sync.* Horizontal or composite video synchronisation input to OSD. Positive or negativety.

PXFM Analog pin for the Display Pixel Frequency Multiplier

AVDD *Analog VDD of PLL.* This pin must be tied to VDD externally to the ST92195.

GND Digital circuit ground.

AGND Analog circuit ground(must be tied externally to digital GND).

CVBS1 Composite video input signal for the Teletext slicer and sync extraction.

CVBS2 Composite video input signal for the VPS/WSS slicer. Pin AC coupled.

AVDD1, AVDD2 Analog power supplies(must be tied externally to AVDD).

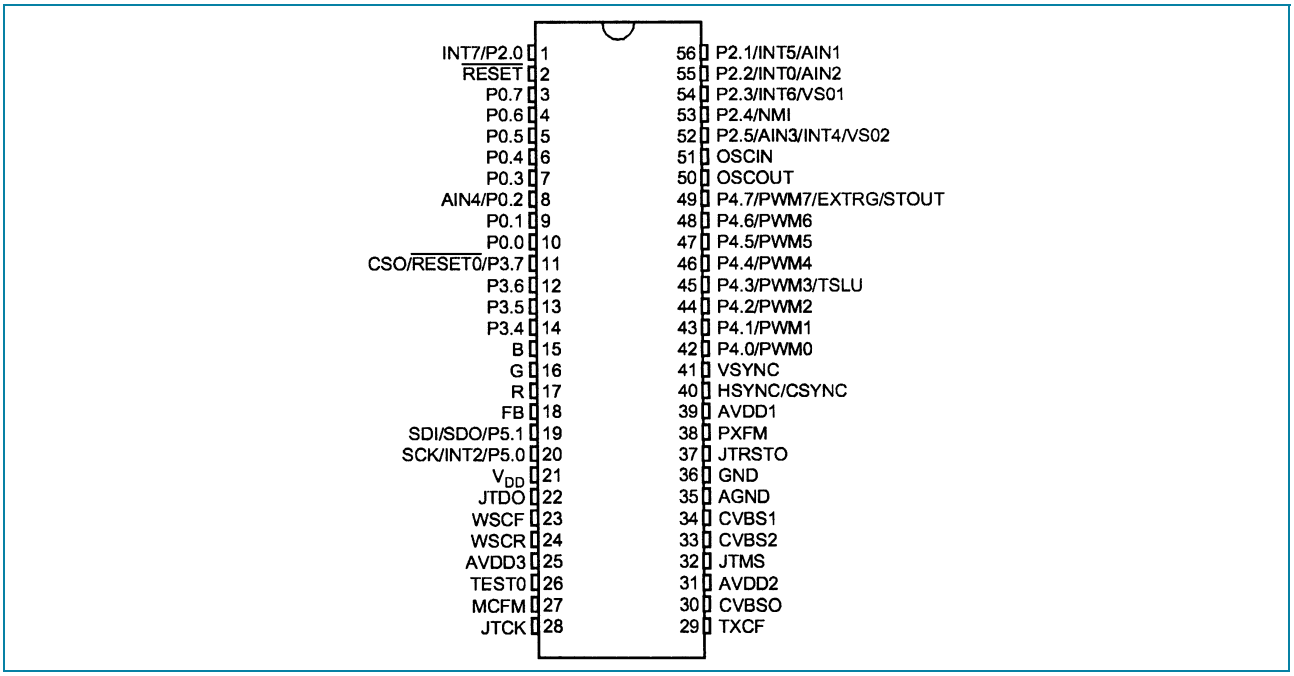
TXCF Analog pin for the VPS/WSS line PLL.

CVBSO, JTDO, JTCK Test pins : leave floating.

JTMS, TEST0 Test pins : must be tied to AVDD2.

JTRST0 Test pin : must be tied to GND.

Figure 2. Pin Description



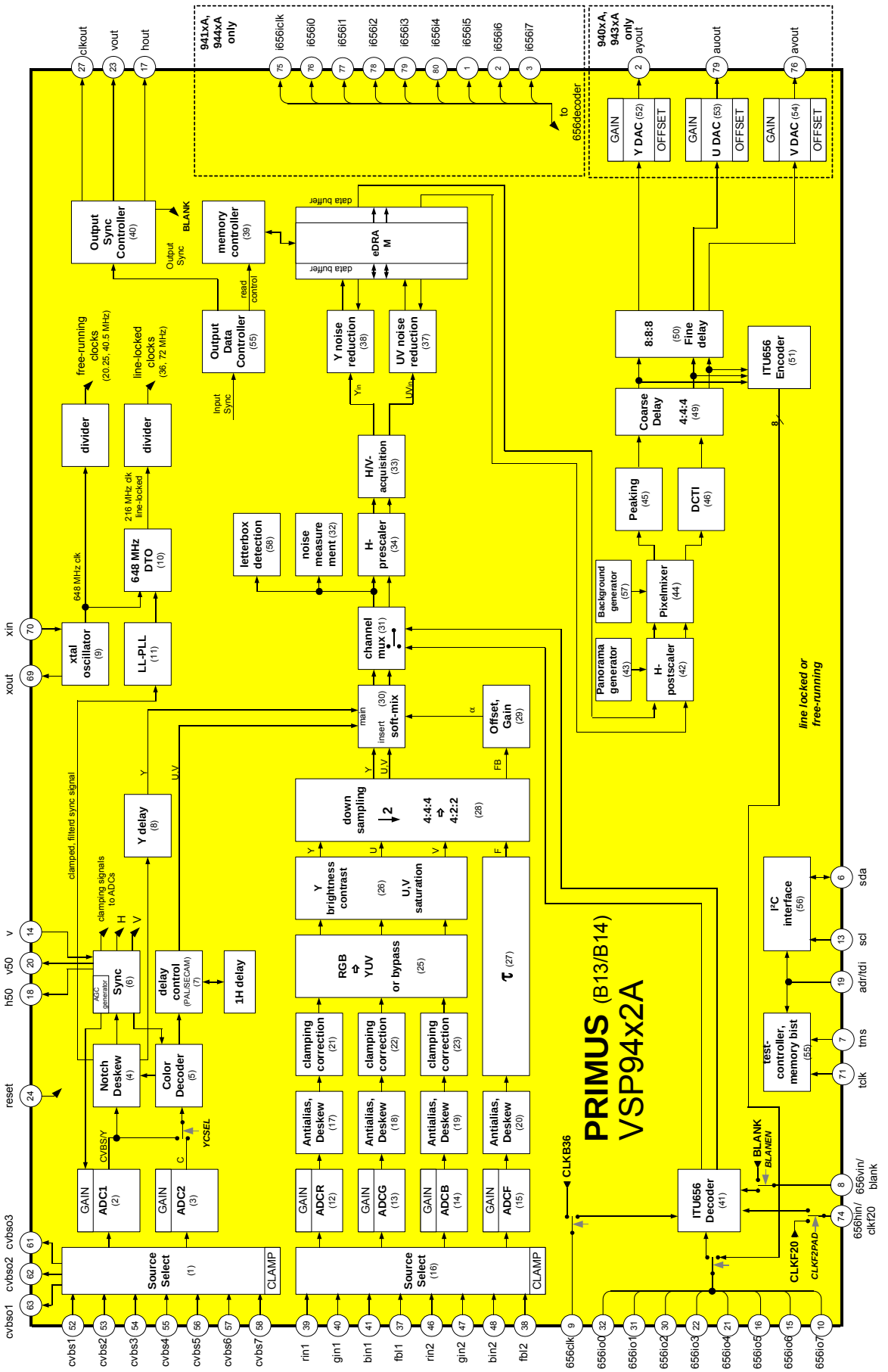
IC DESCRIPTION

5.2. VSP 9412A

(1) Description

– Integrated Video Matrix switch
  • Up to seven CVBS inputs, up to two Y/C inputs,
  • Three CVBS outputs (Y/C inputs signals are combined to CVBS output format)
  • 9 bit amplitude resolution for CVBS, Y/C A/D converter
  • AGC (Automatic Gain Control)
– Multi-standard color decoder
  • PAL/NTSC/SECAM including all substandards
  • Automatic recognition of chroma standard
  • Only one crystal necessary for all standards
– RGB-FBL or YUV-H-V input
  • 8 bit amplitude resolution for RGB or YUV
  • 8 bit amplitude resolution for FBL or H
– ITU656 support (version dependent, refer to next chapter)
  • ITU656 input/output
  • DS656 output (double-scan ’656-like’ output)
– Letterbox detection
– Noise reduction
  • Temporal noise reduction
  • Field-based temporal noise reduction for luminance and chrominance
  • Different motion detectors for luminance and chrominance or identical
  • Flexible programming of the temporal noise reduction parameters
  • Automatic measurement of the noise level
– Horizontal scaling of the $1f_H$ signal
  • Split-screen possible with additional PiP or Text processor
– Flexible digital horizontal scaling of the $2f_H$ signal
  • Scaling factors: 3, ..., 0.75 including 16:9 compatibility
  • 5 zone panorama generator
– Embedded memory
  • On-chip memory controller
  • Embedded DRAM core for field memory
  • SRAM for PAL/SECAM delay line
– Data format 4:2:2
– Flexible clock and synchronization concept
  • Horizontal line-locked or free-running mode
  • Vertical locked or free-running mode
– Scan-rate-conversion
  • Simple interlaced modes (100/120 Hz): AABB, AAAA, BBBB (9402A/9412A only)
  • No scan-rate-conversion modes (50/60 Hz): AB, AA, BB (9432A/9442A only)
– Flexible output sync controller
  • Flexible positioning of the output signal
  • Flexible programming of the output sync raster
  • ’Blank signal’ generation
– Signal manipulations
  • Still field
  • Insertion of colored background
  • Windowing
  • Vertical chrominance shift for improved VCR picture quality
– Sharpness improvement
  • Digital color transition improvement (DCTI)
  • Peaking (luminance)
– Three D/A converters
  • 9 bit amplitude resolution for Y, -(R-Y), -(B-Y) output
  • 72 MHz clock frequency
  • Two-fold oversampling for Anti-imaging
  • Simplification of external analog postfiltering
– 1920 active pixel/per line in default configuration
– I^2C-bus control (400 kHz)
  • selectable I^2C address
– 1.8 V ± 5% and 3.3 V ± 5% supply voltages
– MQFP80B package

(2) Block Diagram



(3) Pin Connections

Pin No.	Pin Name	Type	Connection (If not used)	Short Description
1	VDDDACY	S/I		DAC (Y)
2	AYOUT	O/I		Y output
3	VSSDACY	S/I		DAC (Y)
4	VSSD2	S		Supply voltage for digital (0 V digital)
5	VDDD2	S		Supply voltage for digital (1.8 V digital)
6	SDA	I/O		I^2C-Bus data
7	TMS	I		Testmode select (Connected to vdd33)
8	656VIN/BLANK[1)]	I/O	Connect to vss and disable blank	Separate V input for 656 / BLANK output
9	656CLK	I/O	Leave open	Digital input / output clock

APPENDIX

IC DESCRIPTION

Pin No.	Pin Name	Type	Connection (If not used)	Short Description
10	656IO7	I/O	Leave open	Digital input / output (MSB)
11	VSSP2	S		Supply voltage for digital (0 V pad)
12	VDDP2	S		Supply voltage for digital (3.3 V pad)
13	SCL	I		I^2C-Bus clk
14	V[2)]	I	Connect to vss	Vertical pulse for RGB input
15	656IO6	I/O	Leave open	Digital input / output
16	656IO5	I/O	Leave open	Digital input / output
17	HOUT	O	Leave open	Horizontal output (Single or double scan, dependent on version)
18	H50[3)]	O	Leave open	Hout 50 Hz (with skew)
19	ADR / TDI	I		I^2C address / test data in
20	V50[4)]	O	Leave open	Vout 50 Hz
21	656IO4	I/O	Leave open	Digital input / output
22	656IO3	I/O	Leave open	Digital input / output
23	VOUT	O	Leave open	Vertical output (Single or double scan, dependent on version)
24	RESET	I		Reset input (Reset when low)
25	VDDP3	S		Supply voltage for digital (0 V pad)
26	VSSP3	S		Supply voltage for digital (3.3 V pad)
27	CLKOUT	O	Leave open	Output clock (27 MHz nom.)
28	VDDD3	S		Supply voltage for DRAM (1.8 V digital)
29	VSSD3	S		Supply voltage for digital (0 V digital)
30	656IO2	I/O	Leave open	Digital input / output
31	656IO1	I/O	Leave open	Digital input / output
32	656IO0	I/O	Leave open	Digital input / output (LSB)
33	VSSD4	S		Supply voltage for digital (0 V digital)
34	VDDD4	S		Supply voltage for digital 1.8 V digital
35	VDDAFBL	S		Supply voltage for FBL (1.8 V)
36	VSSAFBL	S		Supply voltage for FBL (0 V)
37	FBL1	I	Connect to vss	Fast Blank input 1 (H1) (Analog input)
38	FBL2	I	Connect to vss	Fast Blank input 2 (H2) (Analog input)

APPENDIX

IC DESCRIPTION

Pin No.	Pin Name	Type	Connection (If not used)	Short Description
39	RIN1	I	Connect to vss	R or V in1 (Analog input)
40	GIN1	I	Connect to vss	G or Y in1 (Analog input)
41	BIN1	I	Connect to vss	B of U in1 (Analog input)
42	VDDARGB	S		Supply voltage for RGB (1.8 V)
43	VSSARGB	S		Supply voltage for RGB (0 V)
44	VDD33RGB	S		Supply voltage RGB (3.3 V)
45	VSS33RGB	S		Supply voltage RGB (0 V)
46	RIN2	I	Connect to vss	R or V in2 (Analog input)
47	GIN2	I	Connect to vss	G or Y in2 (Analog input)
48	BIN2	I	Connect to vss	B of U in2 (Analog inpu)
49	VSSD5[5)]	S	Connect to vss	Supply voltage for digital (0 V)
50	VDDAC1	S		Supply voltage CVBS1 (1.8 V)
51	VSSAC1	S		Supply voltage CVBS1 (0 V)
52	CVBS1	I	Connect to vss	CVBS input (Analog input)
53	CVBS2	I	Connect to vss	CVBS input (Analog input)
54	CVBS3	I	Connect to vss	CVBS input (Analog input)
55	CVBS4	I	Connect to vss	CVBS input or Y1 (Analog input)
56	CVBS5	I	Connect to vss	CVBS input or C1 (Analog input)
57	CVBS6	I	Connect to vss	CVBS input or Y2 (Analog input)
58	CVBS7	I	Connect to vss	CVBS input or C2 (Analog input)
59	VDD33C	S		Supply voltage CVBS (3.3 V)
60	VSS33C	S		Supply voltage CVBS (0 V)
61	CVBSO3	O	Leave open	CVBS output 3 (Analog output)
62	CVBSO2	O	Leave open	CVBS output 2 (Analog output)

IC DESCRIPTION

Pin No.	Pin Name	Type	Connection (If not used)	Short Description
63	CVBSO1	O	Leave open	CVBS output 1 (Analog output)
64	VDDAC2	S		Supply voltage CVBS2 (1.8 V)
65	VSSAC2	S		Supply voltage CVBS2 (0 V)
66	VDDD1	S		Supply voltage for digital (1.8 V digital)
67	VSSD1	S		Supply voltage for digital (0 V digital)
68	VDDAPLL	S		Supply voltage for PLL (1.8 V)
69	XOUT	O		Crystal connection 2
70	XIN	I		Crystal connection 1
71	TCLK	I		Testclock
72	VDDP1	S		Supply voltage for digital (3.3 V pad)
73	VSSP1	S		Supply voltage for digital (0 V pad)
74	656HIN/CLKF20	I/O	Connect to vss and disable clock	Separate H input for 656 / 20.25 clock output
75	VDDDACV	S/I	Leave open	DAC (V) (27 MHz nom.)
76	AVOUT	O/I	Leave open	V output
77	VSSDACV	S/I	Leave open	DAC (V)
78	VDDDACU	S/I		DAC (U)
79	AUOUT	O/I		U output
80	VSSDACU	S/I		DAC (U)

5-3 DDP3315C
(1) General Description
1. Introduction

The DDP 3315C is a mixed signal single-chip digital display and deflectionprocessor, designed for high-quality back-end applications in double scan and HDTV TV sets with 4:3 or 16:9 picture tubes. Its interfaces qualifiesthe IC to be combined with state of the art digital scan rate converters as well as analog HDTV sources. It contains the entire digital video component and deflectionprocessing and all analog interfaces to display the picture on a CRT.
The main features are:

Video Processing

- linear horizontal scaling (0.25 ... 4), as well as nonlinear horizontal scaling “panoama vision”
- dynamic black level expander
- luma transient improvement (LTI)
- dynamic peaking
- color transient improvement (CTI)
- programmable RGB matrix
- black stretch, blue stretch, gamma correction via programmable NCE on RGB
- two analog double scan inputs with fastblanking (one RGB and one RGB/YC_rC_b/YP_rP_b selectable)
- average and peak beam current limiter
- automatic picture tube adjustment (cutoff, drive)
- histogram calculation

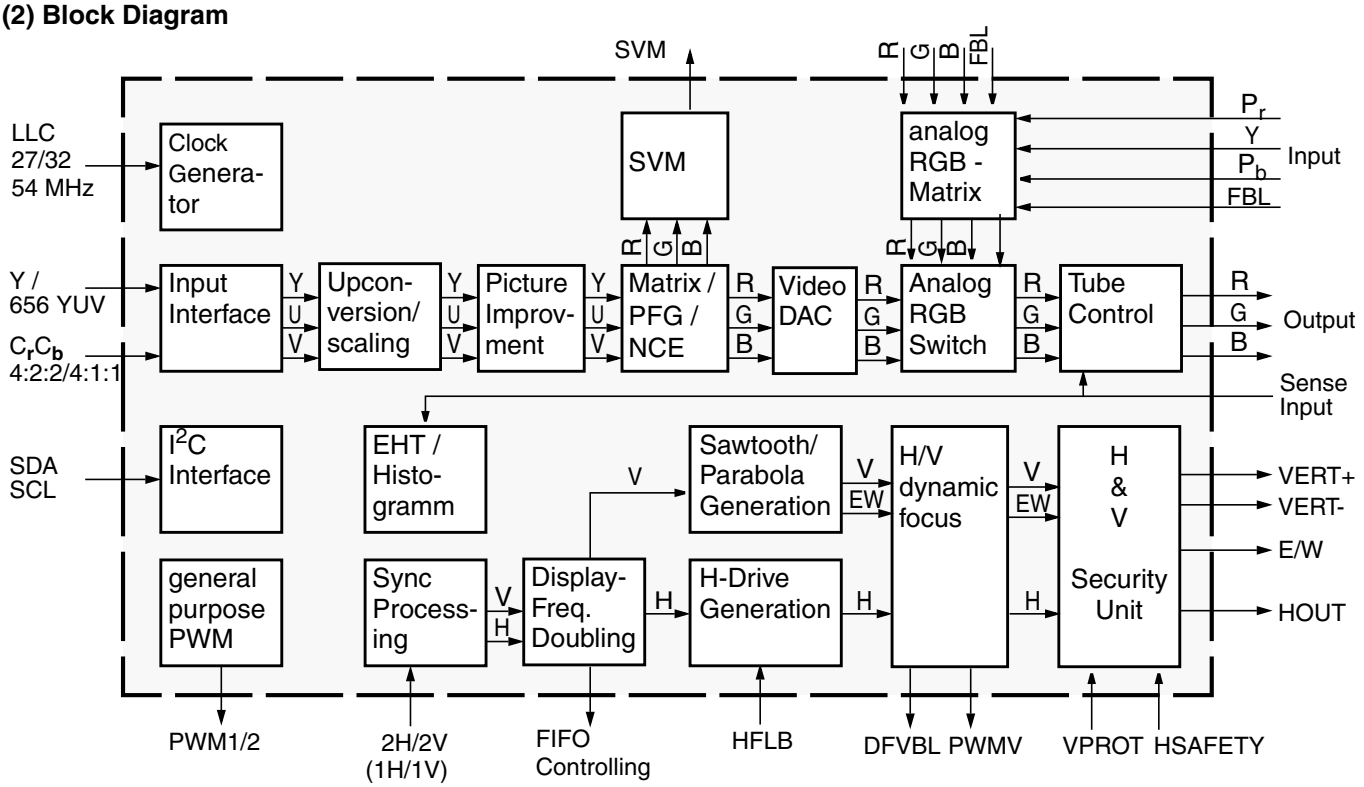
Deflection Processing

- scan velocity modulation output
- digital EHT compensation for vertical / east-west
- soft start/stop of H-drive
- vertical angle and bow correction
- differential vertical outputs
- vertical zoom via deflection
- horizontal and vertical protection circuit
- horizontal frequency for VGA/SVGA/1080I
- black switch off procedure
- supports horizontal and vertical dynamic focus

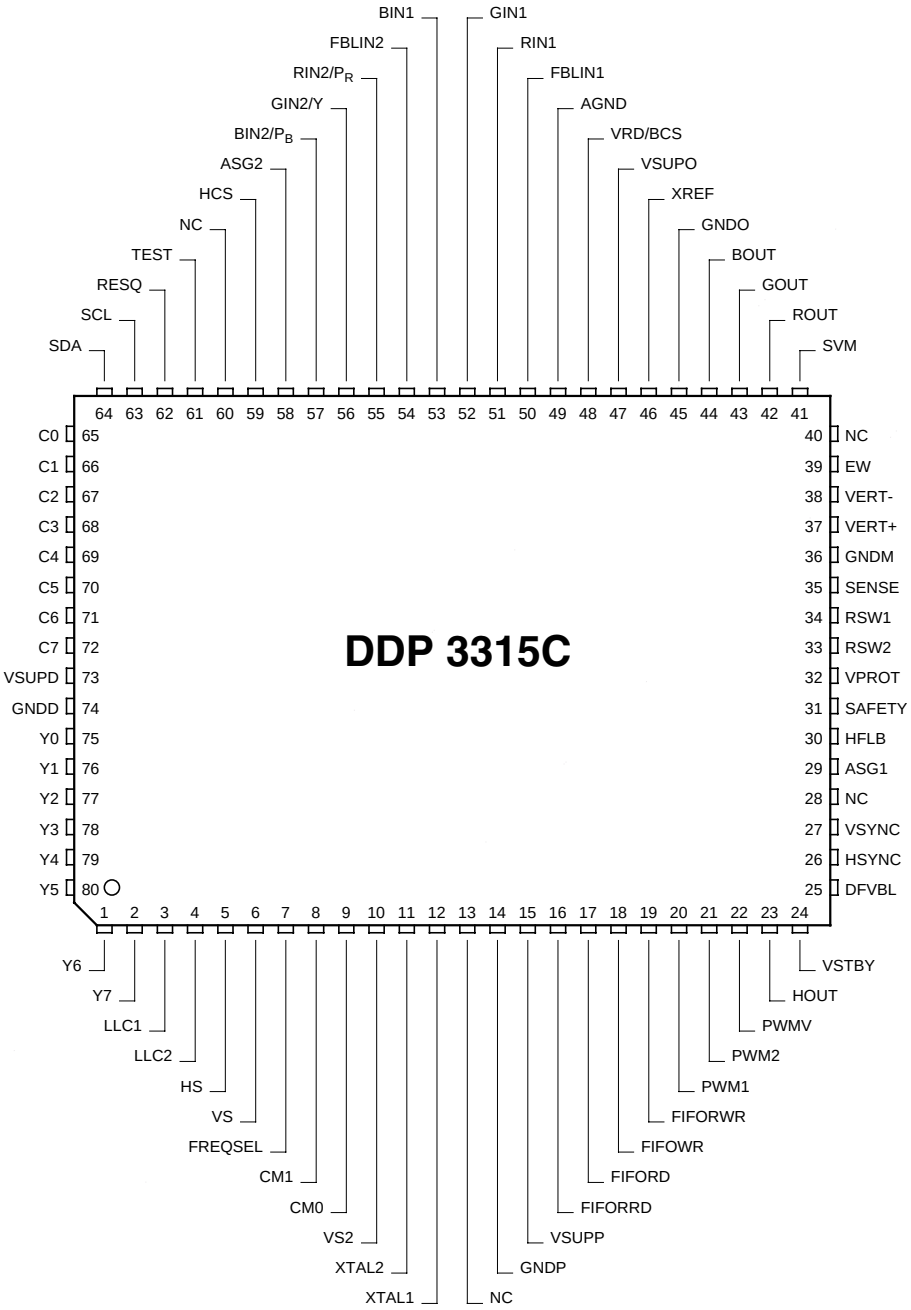
Miscellaneous

- selectable ITU-R 601 4:1:1 / 4:2:2 YC_rC_b input or double scan ITU-R 656 input at 54MHz LLC
- selectable 27/32/54MHz MHz line-locked clock input
- crystal oscillator for horizontal safety
- picture frame generator
- hardware for simple 50/60 Hz to 100/120 Hz conversion (display frequency doubling)
- 80PQFP package, 5V analog and 3.3V digital supply

(2) Block Diagram



(3) Pin Configuration



(4) Pin Circuits

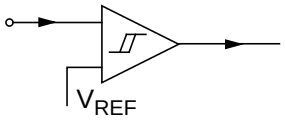


Fig. 4–3: Input pins LLC2, C[7:0], Y[7:0], HS, VS, VS2, HFLB, SAFETY, VPROT, 656EN, CM0, CM1, FREQSEL, RESQ, TEST

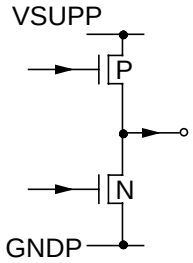


Fig. 4–4: Output pins FIFORRD, FIFORD, FIFOWR, FIFORWR, DFVBL, HSYNC, VSYNC, PWM1, PWM2, PWMV

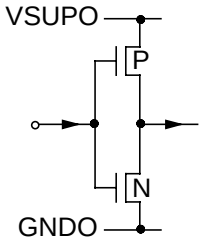


Fig. 4–5: Analog fastblank pins FBLIN1, FBLIN2

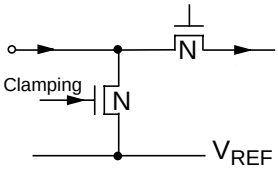


Fig. 4–6: Input pins RIN1, GIN1, BIN1, RIN2/P_R, GIN2/Y, BIN2/P_B

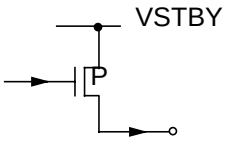


Fig. 4–7: Output pin HOUT

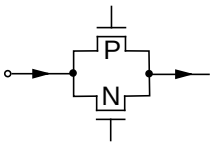


Fig. 4–8: Input pin SENSE

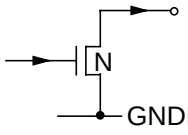


Fig. 4–9: Output pin RSW2

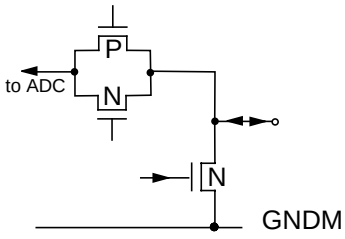
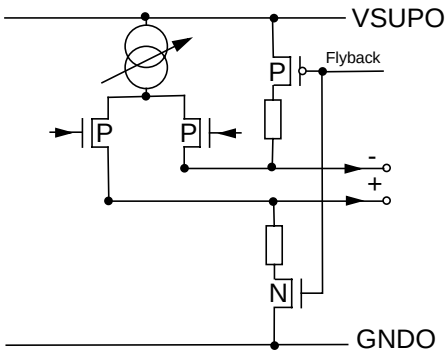


Fig. 4–10: I/O pin RSW1



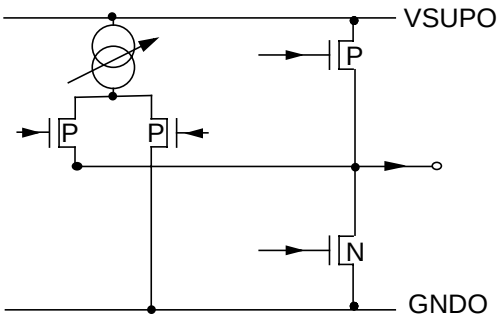


Fig. 4–12: Output pin EW

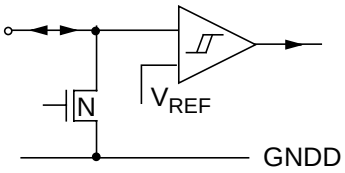


Fig. 4–16: I/O pins SCL, SDA

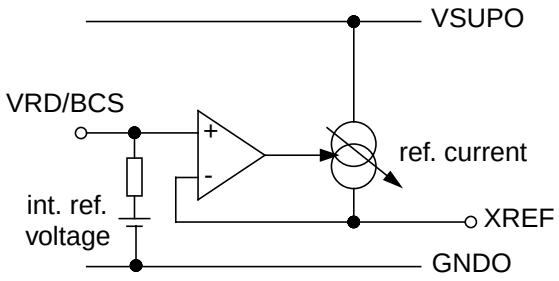


Fig. 4–13: Input pins XREF, VDR/BCS

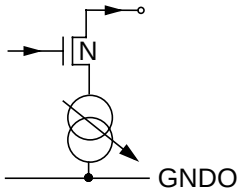


Fig. 4–14: Output pins SVM, ROUT, GOUT, BOUT

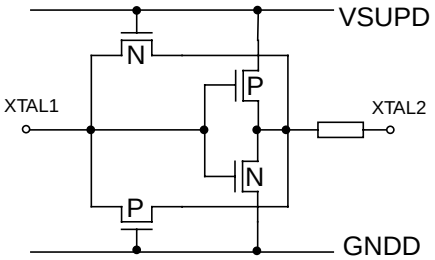


Fig. 4–15: Input pin XTAL1, Output pin XTAL2

Together with this pin, it can be used to drive symmetrical deflection amplifiers.

Pin 21 - East/West Parabola Output **EW**
This pin supplies the parabola signal for the East/West correction. The drive signal is generated with 15-bit precision. The analog voltage is generated by a 4-bit current DAC with external resistor and uses digital noise-shaping.

Pin 22 - DAC Current Reference **XREF**
External reference resistor for DAC output currents, typical 10 k§ , to adjust the output current of the D/A converters. (see recommended operation conditions).
This resistor has to be connected to analog fround as closely as possible to the pin.

Pin 23 - Scan Velocity Modulation Output **SVM**
This output delivers the analog SVM signal. The D/A converters. At zero signal the output current is 50% of the maximum output current.

Pin 24,25,26 - Analog RGB Output **ROUT, GOUT, BOUT**
These pins are the analog Red/Green/Blue outputs of the back-end. The outputs are current sinks.

Pin 27 - Ground, Analog Back-end **GNDO***
This pin has to be connected to the analog supply voltage. No supply current for the digital stages should flow through this line.

Pin 28 - Supply Voltage, Analog Back-end **VSUPO***
This pin has to be connected to the analog supply voltage. No supply current for the digital stages should flow through this line.

Pin 29 - DAC Reference Decouplign/Beam Current Safety **VRD/BCS**
Via this pin, the DAC reference voltage is decoupled by an external capacitor. The DAC output currents depend on this voltage, therefore a pull-down transistor can be used to shut off all beam currents. A decoupling capacitor of 4.7uF in parallel to 100uF (low inductance) is required.

Pin 30, 34 - Fast-Blank Input **FBLIN1/2**
These pins are used to switch the RGB outputs to the external analog RGB inputs. FBLIN1 switches the RIN1, GIN1 and BIN1 inputs, FBLIN2 switches the RIN2, GIN2 and BIN2 inputs. The active level (Low or High) can be selected by software.

Pin 31, 32, 33 - Analog RGB Input1 **RIN1, GIN1, BIN1**
These pin are used to insert an external analog RGB signal, e.g. from a SCART connector which can by switched to the analog RGB outputs with the Fast-Blank signal.
The analog back-end provides separate brightness and contrast settings for the external analog RGB signals.

Pin 35, 36, 37 - Analog RGB Input2 **RIN2, GIN2, BIN2**
These pins are used to insert an external analog RGB signal, e.g. from a SCART connector which can by switched to the analog RGB outputs with the Fast-Blank signal.
The analog back-end provides separate brightness and contrast settings for the external analog RGB signals.

Pin 38 - Test Input **TEST**
This pin enables factory test modes. For normal operation it must be connected to ground.

Pin 39 - Reset Input **RESQ**
A low level on this pin resets the DDP 3310B.

Pin 40 - Adjustable DC Output 1 **PWM1**
This output delivers a DC voltage with a resolution of 8 bit, adjustable over the I^2Cbus. The output is driven by a push-pull stage. The PWM frequency is appr 79.4MHz. For a ripple-free voltage a first order lowpass filter with a corner frequency < 120 Hz should be applied.

Pin 41 - Adjustable DC Output 2 **PWM2**
See pin 40.

Pin 42 - Half-Contrast Input **HCS**
Via this input pin the output level of the D/A-converted internal RGB signals can be reduced by 6dB. Inserted external analog RGB signals remain unchanged.

Pin 43...50 - Picture Bus Chroma **C0...C7**
The Picture Bus Chroma lines carry the multiplexed color component data. For the 4:1:1 input signal (4-bit chroma) the pins C4...C7 are used.

Pin 51 - Supply Voltage, Digital Circuitry **VSUPD***

Pin 52 - Ground, Digital Circuitry **GNDD***
Digital Circuitry Input Reference

Pin 53 - Main Clock Input **LLC2(53)**
This is the input for the line-locked clock signal. The frequency can be 27, 32, or 40.5 MHz.

Pin 54...61 - Picture Bus Luma **Y0...Y7**
The Picture Bus Luma lines carry the digital luminance data.

Pin 62 - Line-Locked Clock Input **LLC1**
This is the reference clock for the single frequency input sync signals required in a FIFO application. The frequency can be 13.5, 16, or 20.25 MHz.

Pin 63 - Sync Signal Input **HS**
This pin gets the horizontal sync information. Either single or double horizontal frequency or VGA horizontal sync signal.

Pin 64 - Sync Signal Input **VS**
This pin gets the vertical sync informatoion. Either single or double vertical frequency or VGA vertical sync signal.

Pin 65, 66 - Crystal Output / Input **XTAL2 / XTAL1**
These pins are connectecd to an 5-MHz crystal oscillator. The security unit for the HOUT signal uses this clock signal as reference.

Pin 67 - I^2C Data Input/Output **SDA**
Via this pin the I^2C - bus data are written to or read from the DDP 3310B.

Pin 68 - I^2C Clock Input **SCL**
Via this pin, the clock signal for the I^2C-bus will be supplied. The signal can be pulled down by an internal transistor.

*** Application Note :**
All ground pins should be connected separeately with short and low-resistive lines to a central power supply ground. Accordingly, all supply pins should be connected separately with short and low-resistive lines to the power supply. Decoupling capacitors from VSUPP to GNDP, VSUPD to GNDD, and VSUPO to GNDO are recommended to be placed as closely as possible to the pins.

IC DC VOLTAGE CHARTS

*** Input signal** - - - - - - - PAL/CH5 - Video : 8 step colour bar (87% AM)
Audio : 1KHz sinewave (60% FM)

*** User 's control condition** - - - - - - - Contrast, Brightness, Colour, Volume Controls-max.

*** Line voltage** - - - - - - - AC 230V, 50Hz

*** All the voltage in each point are measured with Multimeter.**

1. TDA 8172 (I301)

Pin No.	1	2	3	4	5	6	7
V(DC)	0.2	+15.8	-13.3	-15.8	0	16.5	0.2

2. MSP 3410D (I606)

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	2.6	0	0	0	0	0	4.9	0	5.0	5.0

Pin No.	11	12	13	14	15	16	17	18	19	20
V(DC)	2.4	2.4	2.4	0.2	0.2	0.2	0.2	4.9	0	0.2

Pin No.	21	22	23	24	25	26	27	28	29	30
V(DC)	0	0	0	4.9	0.1	0.1	0	0.1	0.1	0

Pin No.	31	32	33	34	35	36	37	38	39	40
V(DC)	0.1	0	3.7	3.7	0	3.7	3.7	6.9	8.0	6.9

Pin No.	41	42	43	44	45	46	47	48	49	50
V(DC)	0	3.7	3.7	3.7	0	3.7	3.7	0	3.7	3.7

Pin No.	51	52	53	54	55	56	57	58	59	60
V(DC)	0	3.7	3.7	2.6	3.7	0	5.0	1.5	1.5	0.3

Pin No.	61	62	63	64
V(DC)	0	2.2	2.1	0.3

3. TDA 4470-M (I101)

Pin No.	1	2	3	4	5	6	7	8	9	10
V(DC)	3.1	3.1	3.4	0	1.1	2.4	2.4	2.3	0	0.7

Pin No.	11	12	13	14	15	16	17	18	19	20
V(DC)	2.4	2.2	4.5	3.8	2.6	0	4.2	2.3	3.4	3.3

Pin No.	21	22	23	24	25	26	27	28
V(DC)	3.3	2.8	5.0	2.1	2.1	0.6	0.1	0.1

DAEWOO

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